



helm

health education
learning management



HELM Catalogue

January 2017

Produced in conjunction with
the University of Birmingham,
University Hospitals of Leicester NHS Trust
and Health Education England



UNIVERSITY OF
BIRMINGHAM

University Hospitals of Leicester



NHS Trust

NHS
Health Education England

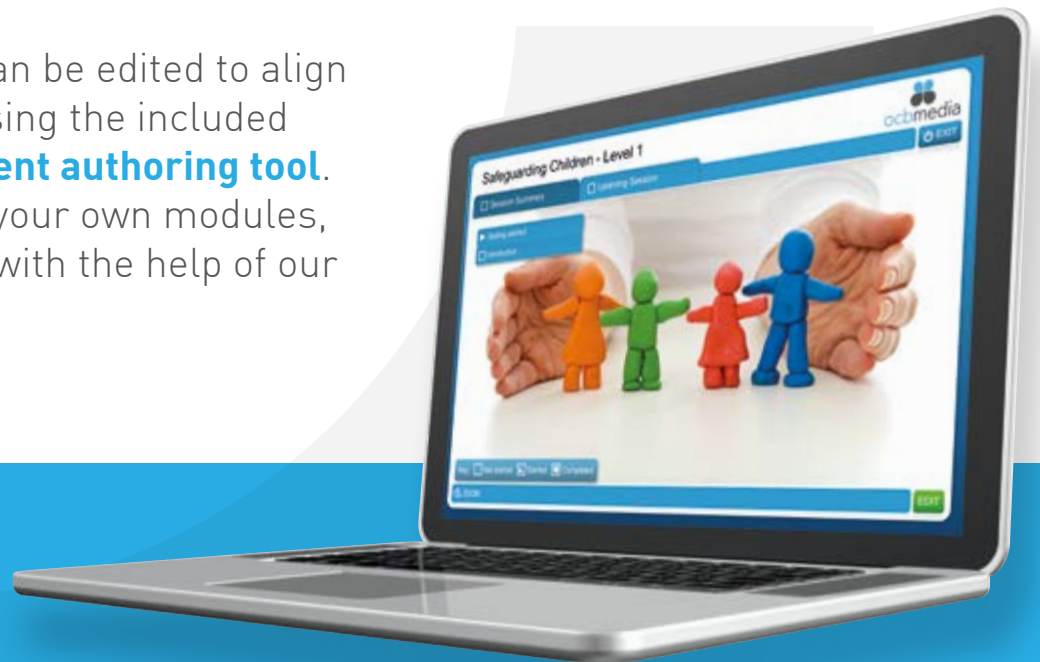


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Deliver & manage the **Core Skills Training Framework, Care Skills Certificate, Leadership Training** and **Prescribing Competencies** to your team

HELM is a collection of SCORM compatible **e-learning modules** for use with your existing Learning Management System (LMS). If you don't have an LMS, or are considering a new one, HELM also includes a powerful LMS with **ESR data integration**.

All HELM modules can be edited to align with local practice using the included **nimble® Author content authoring tool**. You can even create your own modules, either by yourself or with the help of our authoring team.



OVERVIEW

The expanding portfolio of HELM modules have been developed in conjunction with the University of Birmingham, University Hospitals of Leicester NHS Trust and Health Education England. Designed to be flexible and fit in with the way your organisation works, all HELM modules are updated on a regular basis ensuring that you have the most up to date training available for your staff. HELM modules work on any SCORM compatible Learning Management System (LMS), including NHS OLM, Moodle and Kallidus.

- **Proven NHS track record**
- **All modules map to national and speciality guidance**
- **Over 1 million modules delivered to NHS staff**
- **Fully customisable**
- **SCORM 1.2 compliant**
- **Flash and HTML5 compatible – works on mobile devices and older computers equally well**

CONTENTS

Quality improvement

- Action effect diagram 4
- Mental and physical wellbeing..... 5
- Patient and public involvement to improve healthcare..... 6
- Process mapping 7
- Long term success 8
- Stakeholder engagement..... 9
- Plan-do-study-act cycles 10
- Measuring for improvement 11

Leadership and management

- Managing people..... 12
- Managing through change 13
- Coaching skills..... 14
- Influencing stakeholders..... 15
- Talent management 16

Personal productivity

- Stress management 17
- Time management..... 18

Healthcare statutory and mandatory

- Information governance 19
- Equality and diversity..... 20
- Moving and handling..... 21
- Health and safety 22
- Infection prevention (clinical)..... 23
- Infection prevention (non-clinical).... 24
- Safeguarding adults 25
- Safeguarding children level 1 26
- Safeguarding children level 2 27
- Conflict resolution 28
- Fire safety..... 29
- Slips, trips and falls (Nursing) 30
- Slips, trips and falls (Medical Staff).. 31

Healthcare general

- Complaints awareness..... 32
- Introduction to quality improvement..... 33
- Mentorship for nurses and midwives..... 34
- Charging overseas visitors..... 35
- Clinical coding..... 36
- Cost improvement plan 37
- Introduction to finance 38
- Performance appraisal 39
- Procurement: buying the right way .. 40
- Referral to treatment 41
- Appraisal skills..... 42
- National early warning scorecard - acute care 43
- National early warning scorecard - ambulance care..... 44
- National early warning scorecard - mental health 45

- National early warning scorecard - community/nursing or residential home 46
- National early warning scorecard – primary care..... 47
- Foundation module in kidney care ... 48
- Fluid management in kidney disease (advanced)..... 49
- Pacemakers and ICDs..... 50

Hydration

- Water and hydration 51
- Hydration in care homes 52
- Perioperative hydration 53
- Hydration and physical activity..... 54

Safer Use of Medicines

- Adverse drug reactions 55
- Drug interactions 56
- Special patient groups..... 57
- Dose Calculations..... 58
- Evidence-based practice 59
- UK medicines policy 60
- Utilising the BNF(C)..... 61
- Anticoagulation 1 62
- Anticoagulation 2 63
- Introduction to pain management ... 64
- Pharmacological pain management 65

Paediatric Prescribing

- Utilising the BNF(C)..... 66
- Developmental pharmacology..... 67
- Practical prescribing 68
- Neonates 69
- Neurology 70
- Dermatology..... 71

Prescribing

- Prescription documentation 72
- Fundamentals of pharmacology..... 73
- Taking a safe and effect drug history 74
- Adherence and concordance 75
- Clinical kinetics..... 76
- Dosing and calculation 77
- Formulation and administration..... 78
- Prescribing in infection 79
- Drug allergy and anaphylaxis..... 80
- Poisoning..... 81
- Cardiac arrest 82
- Fluids 83
- Diabetic emergencies..... 84
- Adverse drug reactions 85
- Medication errors 86
- Monitoring drug therapy..... 87
- Drug interactions 88
- Toxic tablets 89
- Parenteral poisons 90

- Perioperative prescribing..... 91
- Prescribing in hepatic dysfunction ... 92
- Prescribing in older adults..... 93
- Prescribing in pregnancy 94
- Prescribing in breastfeeding..... 95
- Prescribing in paediatrics 96
- Dementia friendly prescribing 97
- Respiratory medicine 98
- Diabetes..... 99
- Psychiatric symptom management 100
- Anticoagulation 101
- Infection in secondary care 102
- Management of pain..... 103
- Heart failure 104
- Cardiac dysrhythmias..... 105
- Epilepsy 106
- Drugs of misuse..... 107
- Rational drug choice..... 108
- Ethics and consent 109
- Root cause analysis..... 110
- Prescribing at the interface and team prescribing 111
- Managing complications of anticancer therapies..... 112
- Palliative and end-of-life care 113

Care Certificate

- Standard 1: Understand your role 114
- Standard 2: Your personal development..... 115
- Standard 3: Duty of care..... 116
- Standard 4: Equality and diversity 117
- Standard 5: Work in a person centred way 118
- Standard 6: Communication 119
- Standard 7: Privacy and dignity..... 120
- Standard 8: Fluids and nutrition 121
- Standard 9: Mental health, dementia & learning disability 122
- Standard 10: Safeguarding adults 123
- Standard 11: Safeguarding children..... 124
- Standard 12: Basic life support 125
- Standard 13: Health and safety..... 126
- Standard 14: Handling Information..... 127
- Standard 15: Infection prevention and Control..... 128

Module Overview:

Lots of people have great ideas about how to make improvements to care, but we've heard from many that it can be difficult to get from a great idea to putting something into practice.

We've created this e-learning module after listening and working with people who are trying to make improvements happen on the ground. We've seen the difficulties they can experience and in this (and other) e-learning modules we will present some tools that you can use to help you overcome these difficulties and get your ideas into practice.

This module aims to offer you information on the Action Effect Method - a method you can use to bring people together, develop a shared aim, and plan and discuss the changes and improvements you can make.

It could be useful for anyone who has an idea for making changes in healthcare; this could include clinicians, staff working in the NHS but also patients, carers and the public.

Learning Objectives:

By the end of this module you should:

- Understand what the Action Effect Method is, and how to use it to improve or change something.
- Be able to practically apply the Action Effect Method in a health care setting.
- Visualise how your planned improvements link through cause and effect relationships to the shared aim.

Action Effect Diagram

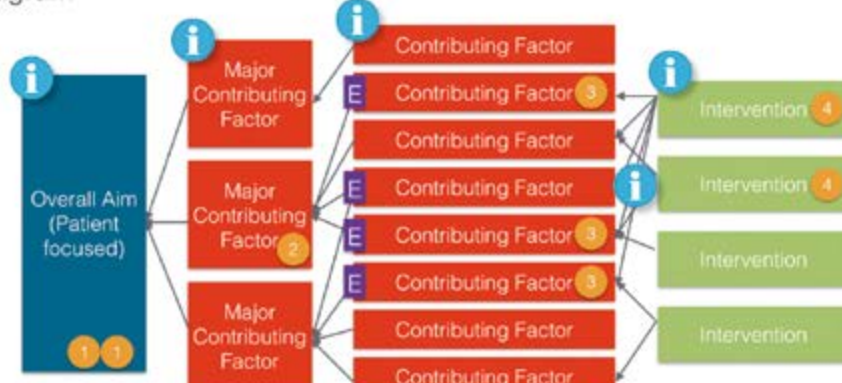
Learning Session | What is an Action Effect Diagram? | MENU

Representing Action Effect as a diagram

The Action Effect Diagram gives you a visual representation of cause-effect relationships that could impact on the shared aim of your improvement project.

The diagram you create isn't set in stone - it is a live document for you to add to and create new versions of throughout your improvement project.

Click on the information buttons to recap the main elements that make up an Action Effect Diagram.



Overall Aim (Patient focused) (1) (1)

Major Contributing Factor (2)

Contributing Factor (3)

Intervention (4)

Evidence (E)

Outcome measures (1)

Process measures (2)

Intervention measures (4)

Evidence (E)

ZOOM | EDIT | Navigation icons

Module Overview:

Lots of people have great ideas about how to make improvements to care, but we've heard from many that it can be difficult to get from a great idea to putting something into practice.

Taking a holistic approach to your quality improvement initiatives can be challenging. We've created this e-learning module after listening to and working with people who are trying to make improvements to people over all wellbeing as part of their quality improvement work. We've seen the difficulties they can experience and in this (and other) e-learning modules we will present some ideas that you can use to help you overcome these difficulties and get your ideas into practice.


This module aims to offer you an opportunity to learn about mental and physical wellbeing and delivering a holistic approach to quality improvement and will help you decide how you might include this in your improvement projects.

It could be useful for anyone who has an idea for making changes in healthcare; this could include clinicians, staff working in the NHS but also patients, services users, carers and the public.

Learning Objectives:

By the end of this module you should be able to:

- Recognise the interrelation of mental and physical health and understand how ignoring this can lead to gaps in health care provision and hinder your project's ability to make real improvements in outcomes, experience and safety for patients and service users.
- Decide if and how it would be appropriate to include consideration of mental and physical wellbeing in your improvement project.
- Choose and use appropriate quality improvement approaches in ways that will support you to look at mental and physical wellbeing in your improvement project.



The screenshot shows the user interface of the e-learning module. At the top, the title 'Mental and Physical Wellbeing' is displayed. Below the title, there are navigation elements: 'Learning Session' and 'Wellbeing in quality improvement'. The main content area is titled 'Closing the gap with quality improvement' and contains text explaining the importance of focusing on the patient as a whole person. It includes three blue buttons: 'Consider mental and physical wellbeing', 'Use quality improvement tools', and 'Continuously check your focus'. There are also two speech bubbles with green checkmarks, each containing text about depression/anxiety as a factor in COPD care. At the bottom, there is a zoom control and a navigation bar with 'EDIT' and other icons.

QUALITY IMPROVEMENT

Module Title: Patient and Public involvement to improve healthcare

Module Overview:

Patients/public and healthcare professionals working together can lead to responsive improvements in healthcare planning, delivery and research. But we've heard from many people that they find patient and public involvement difficult to put into practice.

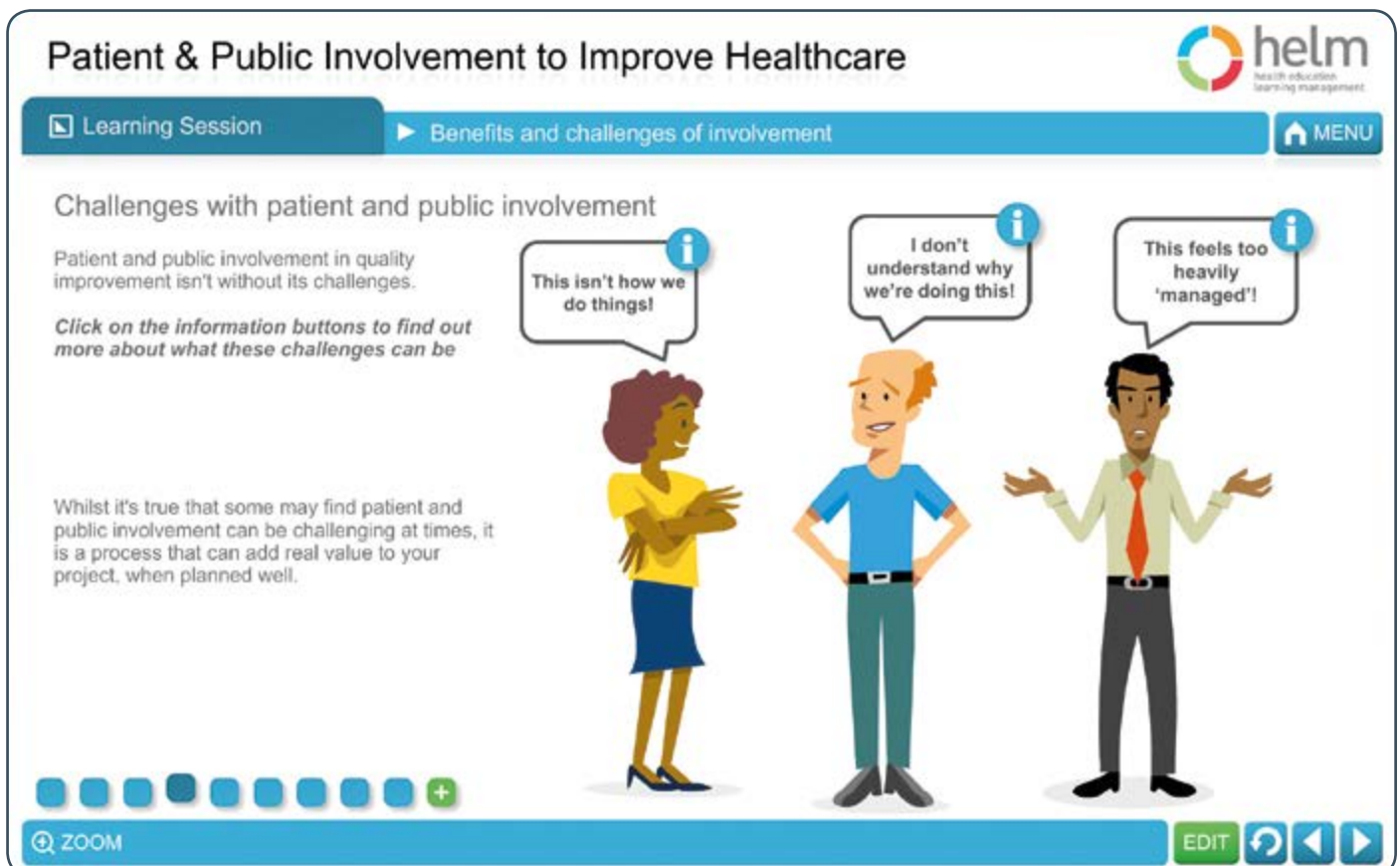
We've created this e-learning module after listening to people and observing the difficulties they experience. The module aims to teach you more about patient and public involvement and arm you with tools to plan how you can work together to make improvements in healthcare.

It could be useful for you, but it could also be helpful for other patients/public/healthcare professionals in your team.

Learning Objectives:

By the end of this module you should be able to:

- Describe how patient and public involvement can contribute to improvement projects.
- Recognise the challenges of involvement and the ways that projects can ensure success.
- Start to plan patient and public involvement for your improvement projects.



The screenshot shows an e-learning interface with the following elements:

- Header:** "Patient & Public Involvement to Improve Healthcare" and the helm logo.
- Navigation:** "Learning Session" and "Benefits and challenges of involvement" tabs, and a "MENU" button.
- Section:** "Challenges with patient and public involvement".
- Text:** "Patient and public involvement in quality improvement isn't without its challenges. Click on the information buttons to find out more about what these challenges can be." and "Whilst it's true that some may find patient and public involvement can be challenging at times, it is a process that can add real value to your project, when planned well."
- Illustration:** Three cartoon characters with speech bubbles containing information icons and text: "This isn't how we do things!", "I don't understand why we're doing this!", and "This feels too heavily 'managed!'".
- Footer:** A progress bar with 10 blue circles and a plus sign, a "ZOOM" button, and "EDIT" and navigation buttons.

Module Overview:

Lots of people have great ideas about how to make improvements to care, but it can be difficult to get from a great idea to making a change in practice.

It is important to understand how any change fits with existing ways of working. Healthcare is provided by many different people who carry out various tasks to deliver patient care. These activities are often related to and are dependent on each other, and introducing a change may require many staff to collectively change what they are doing and when they do things. We've seen the difficulties this can pose for improvement projects and in this (and other) e-learning modules we will present some tools that you can use to help you overcome these difficulties and get your ideas into practice.

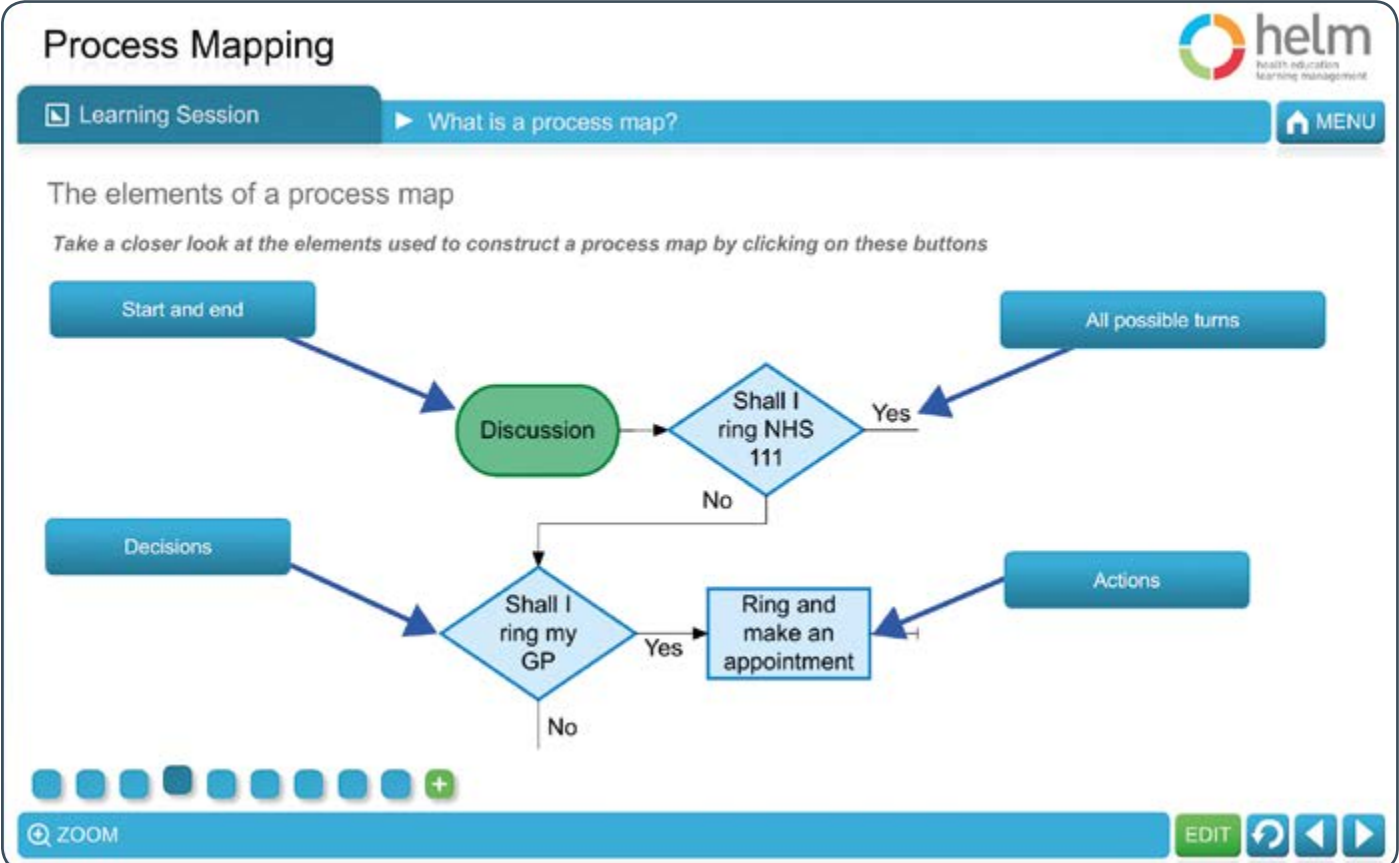
This module aims to offer you information on process mapping - a method you can use to bring people together, find out what's really happening, plan and discuss the changes and improvements you can make. Understanding processes can help ensure that new ideas are embedded into practice and that the right way is the easy way.

It could be useful for anyone who has an idea for making changes in healthcare; this could include clinicians, staff working in the NHS but also patients, carers and the public.

Learning Objectives:

By the end of this module you should be able to:

- Understand what process mapping is, and how to use it to improve or change something.
- Be able to practically apply process mapping techniques in a health care setting.
- Know how to effectively map and understand your context in preparation to change and improve.



Process Mapping

Learning Session ▶ What is a process map? MENU

The elements of a process map

Take a closer look at the elements used to construct a process map by clicking on these buttons

Start and end → Discussion → Shall I ring NHS 111 (Decision) → All possible turns

Decisions → Shall I ring my GP (Decision) → Ring and make an appointment (Action) → Actions

Shall I ring NHS 111 (Yes) → All possible turns

Shall I ring my GP (Yes) → Ring and make an appointment

Shall I ring my GP (No) → Shall I ring NHS 111

Ring and make an appointment (Action)

Zoom EDIT

Module Overview:

Many improvements are made in healthcare everyday but unfortunately a large portion of these don't have a lasting impact on patient care.

Achieving long term success is a challenge as it often involves the coordination of many groups of people and resources in complex and changing environments. We created this e-learning module to support people to reflect upon long term success and consider the possible actions they can take to increase their chances of making a difference to patient care in the long term.

This module offers you an opportunity to learn about what long term success is; what it involves; what this may mean for you; and how it can potentially be addressed.

Learning Objectives:

By the end of this module you should be able to:

- Explain why long term success is important.
- Define long term success and what it means for your improvement initiative.
- Describe your long term success goal.
- Consider how the 12 factors known to influence long term success relate to your projects.
- Increase the chances of achieving long term success in your improvement efforts.



Long Term Success


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Learning Session | How to achieve long term success | MENU

Practice

Multiple resources, systems and processes support long term success. The following four factors reflect upon these support structures and ask you to consider resources available to you and how improvements made will be observed and examined over time.

Click on each circle in the diagram to see questions to ask and how these factors played a part in the Medicines Management Project.



1. Resources in place

2. Progress monitored for feedback & learning

3. Evidence of benefits

4. Robust & adaptable processes

Practice

The Medicines Management Project

ZOOM | EDIT | Navigation icons

Module Overview:

Lots of people have great ideas about how to make improvements to care, but we've heard from many that it can be difficult to get from a great idea to putting something into practice.

We've created this e-learning module after listening to and working with people who are trying to make improvements happen on the ground. We've seen the difficulties they can experience and in this (and other) e-learning modules we will present some tools that you can use to help you overcome these difficulties and get your ideas into practice.

This module aims to offer you information on stakeholder engagement - helping you decide how you might include this in your improvement projects and suggesting tools for doing so.


It could be useful for anyone who has an idea for making changes in healthcare; this could include clinicians, staff working in the NHS but also patients, carers and the public.

Learning Objectives:

By the end of this module you should be able to:

- Identify stakeholders for your improvement project.
- Map out and analyse these stakeholders.
- Communicate effectively with a range of stakeholder groups and individuals.
- Plan how stakeholders will be involved in your project.
- Manage your stakeholder relationships.

Stakeholder Engagement



Learning Session ▶ Understanding your stakeholders MENU

Analysing your stakeholders

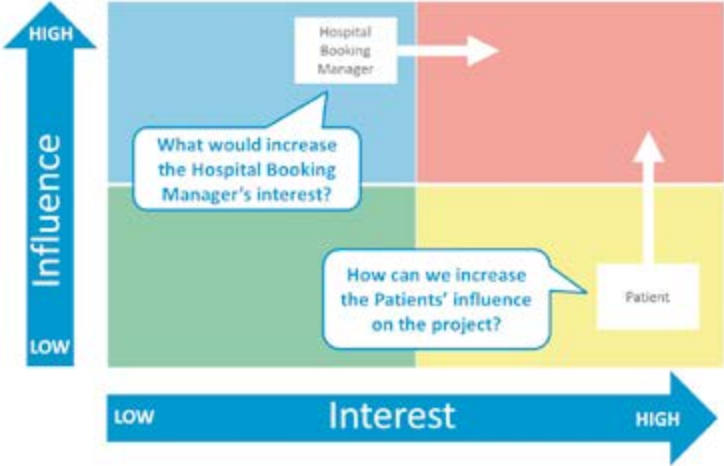
As you create your stakeholder map, you will have already started to analyse and discuss the influence and position of your stakeholders.

At this point, take a moment to step back and review the completed map:

- Is it as you expected?
- Are there any surprises or concerns?
- Are there any stakeholders (especially in the high influence area) you want in a different place?

This is an opportunity to identify those stakeholders that will be critical to your project's success, and whose interest or influence you need to increase. Adding arrows to the map to indicate where you want them to be can help you focus on areas for action.

Begin to explore your options for changing these levels of interest or influence. Your focus is likely to be on levels of influence if this is within the control of your project.



Zoom EDIT

Module Overview:

Healthcare is a complex system, and however well a new idea works in a trial or in the lab, often you cannot know how effective it will be in real life. Ideas will need to be tried, tested and developed.

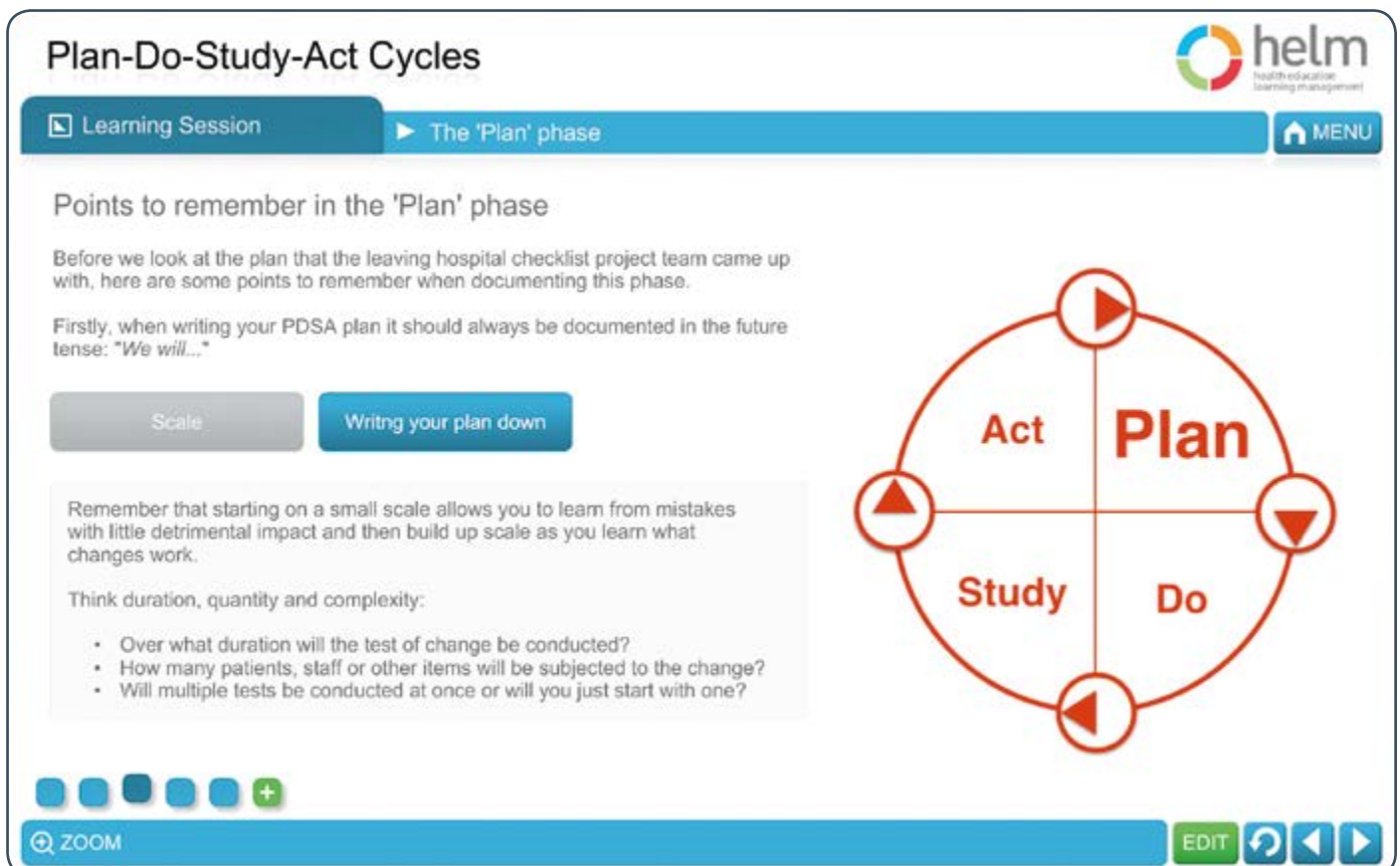
Plan-Do-Study-Act (PDSA) cycles can be used to ensure that the change idea is fit for purpose and able to deliver sustained improvement after the lifetime of the project.

We created this e-learning module to support people to understand PDSA cycles and consider the possible actions they can take to increase their chances of making a difference to patient care in the long term.

Learning Objectives:

By the end of this module you should be able to:

- Know how, when and why to use a PDSA cycle.
- Be able to iteratively test improvement interventions using PDSA cycles.
- Understand how to test change by starting on a small scale and gradually ramping up tests to full-scale intervention.
- Be able to document PDSA cycles in a way that supports your improvement project.



The screenshot shows an e-learning interface for 'Plan-Do-Study-Act Cycles'. At the top right is the 'helm' logo. Below it, a navigation bar shows 'Learning Session' and 'The 'Plan' phase'. A 'MENU' button is on the right. The main content area is titled 'Points to remember in the 'Plan' phase'. It contains text about documenting the plan in the future tense and a list of questions to consider. A circular diagram of the PDSA cycle is on the right. At the bottom, there are navigation icons for zoom, edit, and back/forward.

Plan-Do-Study-Act Cycles

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Learning Session ▶ The 'Plan' phase MENU

Points to remember in the 'Plan' phase

Before we look at the plan that the leaving hospital checklist project team came up with, here are some points to remember when documenting this phase.


Firstly, when writing your PDSA plan it should always be documented in the future tense: "We will..."

Scale Writing your plan down

Remember that starting on a small scale allows you to learn from mistakes with little detrimental impact and then build up scale as you learn what changes work.

Think duration, quantity and complexity:

- Over what duration will the test of change be conducted?
- How many patients, staff or other items will be subjected to the change?
- Will multiple tests be conducted at once or will you just start with one?



The diagram is a circular flow chart representing the PDSA cycle. It consists of a large circle divided into four quadrants by a vertical and a horizontal line. The quadrants are labeled: 'Act' (top-left), 'Plan' (top-right), 'Do' (bottom-right), and 'Study' (bottom-left). At each of the four points where the lines meet the circle, there is a small circle containing a triangle pointing in the direction of the cycle: a right-pointing triangle at the top, a downward-pointing triangle on the right, a left-pointing triangle at the bottom, and an upward-pointing triangle on the left.

ZOOM EDIT

Module Overview:

Many improvements are made in healthcare everyday but unfortunately a large portion of these don't have a lasting impact on patient care.

Measurement can appear daunting for teams leading improvement projects, however there are some basic concepts that can help in avoiding some of the common mistakes made. We created this e-learning module to support people to reflect upon measuring for improvement and consider the possible actions they can take to increase their chances of making a difference to patient care in the long term.


This module offers you an opportunity to learn about measurement for improvement, covering the key principles of understanding variation, what this may mean for you, and how you can apply these ideas in your work.

Learning Objectives:

By the end of this module you should be able to:

- Develop an appreciation of uncertainty and probability as an expected frequency.
- Recognise that there is variation in everything we measure.
- Understand how reacting to variation without the right statistical analysis can lead to flawed decisions.
- Differentiate between common and special cause variation.
- Create and use run charts.

Measuring for Improvement



Learning Session
▶ Understanding variation
HOME MENU

Special causes of variation

The patterns in these two charts are extremely unlikely to arise from our coin tossing process. If we saw them occur as a result of this process, we would be immediately suspicious and would seek reassurance that the coin in question, and the tossing process, was fair, unbiased and not under the influence of external factors.

If we saw these charts arise through the medication errors data, we should be seeking explanations of the patterns, that can be backed up objectively.

Take a look at these possible explanations for the patterns in these charts.

Chart A

Chart B

Chart A might be a result of shift patterns. The cause of the observed pattern is not inherent to the process but arises because of certain circumstances - two different shifts cause the pattern.

These are examples of **special causes of variation** - causes that are not part of the process and only come into play under certain circumstances.

In real life however, things are almost never this straightforward.

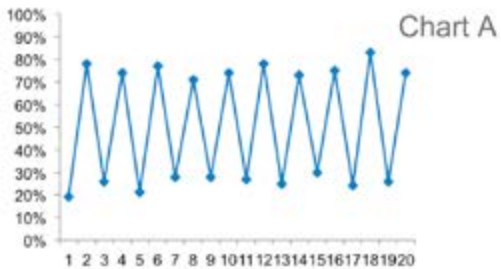


Chart A

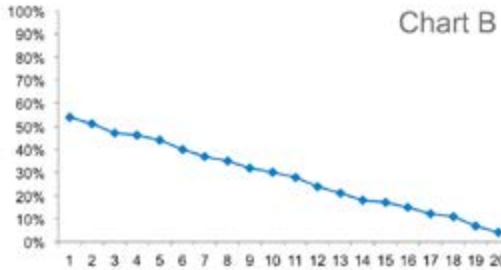


Chart B

🔍 ZOOM
EDIT
↺
▶

Module Overview:

What makes a good manager? Here are some ideas for you to consider:

A good manager is able to:


Plan, give good feedback, communicate, listen, bring out the best in people, use emotional intelligence, adapt, delegate, motivate, inspire, question and manage time.

Learning Objectives:

By the end of this module you should be able to:

- Understand McGregor's Theory X and Theory Y
- Recognise the difference between managing and leading
- Identify key mistakes managers make
- Be able to manage the five toughest personalities at work

Managing People



Learning Session ▶ Dealing with tough personalities MENU

John's reflection

Having talked to other managers, John has identified some key mistakes he was making and addressed them by adapting his own management style. This has made a big difference to his relationship with his team, and he is already seeing positive results.

There is still work to be done though. John is finding five of his employees more difficult to manage than the others, and has noticed their behaviour impacting on the rest of the team. He knows he has to deal with these issues before they get worse. So, to help him find ways of understanding and managing each person's behaviour, John writes down what he has observed about them.


Click on the tabs below to read John's notes.

Sarah Tony Ben Leah Simon

Sarah has been with the organisation for almost two years.

She is a hard worker, but can be self-absorbed at times. She seems to constantly need praise and attention, and acts as if she is superior to everyone else.

Sarah is not always mindful of her colleagues' feelings.



Next

ZOOM EDIT

Module Overview:

According to ACAS, research shows that organisations undergo major change about once every three years. Within this cycle of major change is an almost constant swirl of minor change.

Major change can include:

- Mergers
- Redundancies
- Restructuring, or new working practices

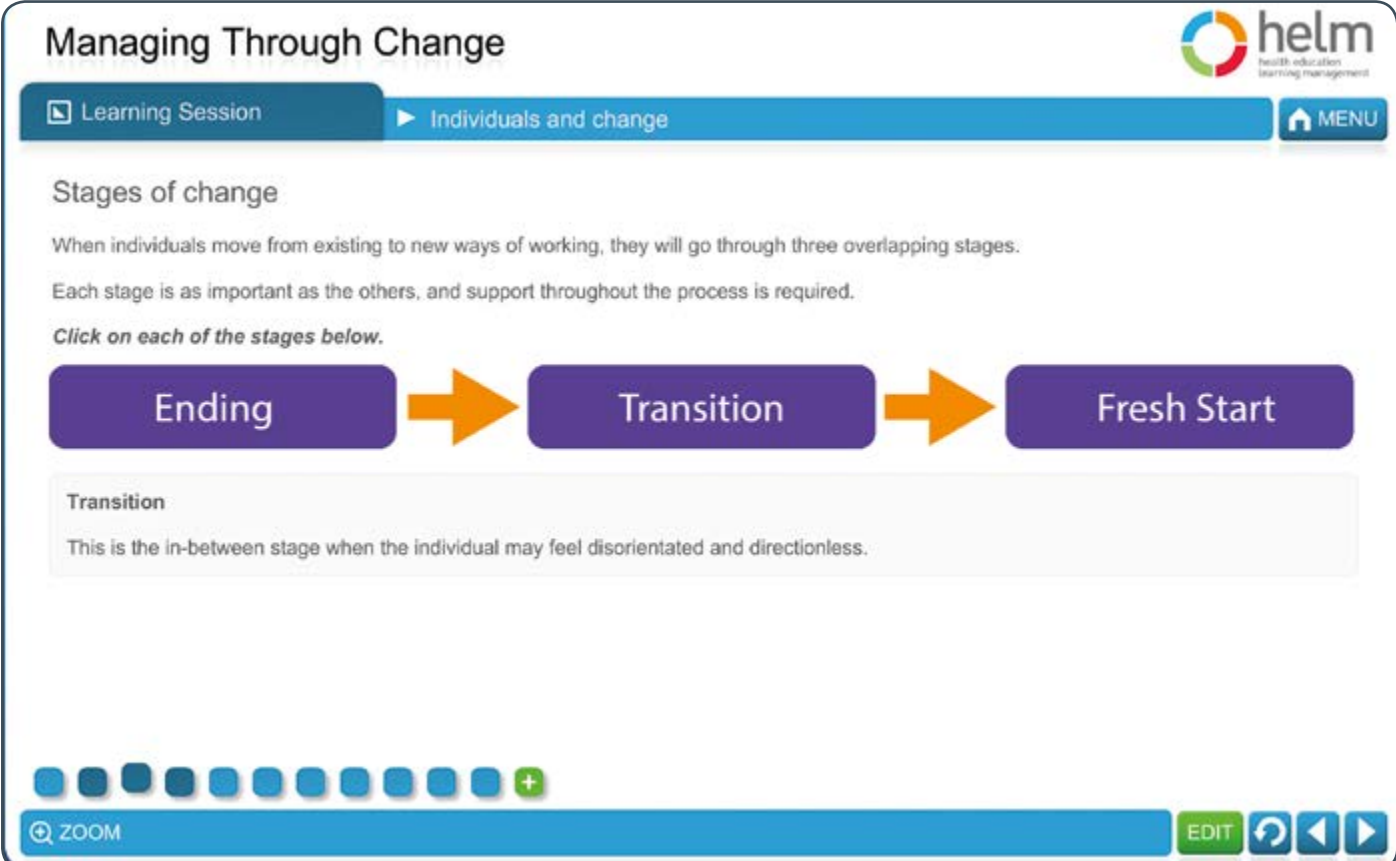
Minor change can include:

- New company policies
- New training courses
- New canteen facilities

Learning Objectives:

By the end of this module you should be able to:

- Understand the reasons for change
- Understand the transition model
- Understand the change curve
- Understand resistance to change



Managing Through Change

Learning Session | Individuals and change | MENU

Stages of change

When individuals move from existing to new ways of working, they will go through three overlapping stages.

Each stage is as important as the others, and support throughout the process is required.

Click on each of the stages below.

Ending → Transition → Fresh Start

Transition

This is the in-between stage when the individual may feel disorientated and directionless.

ZOOM | EDIT | Navigation icons

Module Overview:

Coaching is focused on unlocking a person's potential to maximise his or her own personal potential.

An effective coach draws on a range of skills and models to help their coachee reach a realistic understanding of their situation and needs. They support their coachee in developing ways to bring about a meaningful outcome to this situation and taking positive steps forward.


This module will help you, as a manager, identify and understand some of the principles and processes of successful coaching, and recognise how these can support your team and organisation.

Learning Objectives:

By the end of this module you should be able to:

- Explain the principles of coaching and how these differ from other forms of support and development.
- Recognise how coaching benefits you, your staff and your organisation.
- Apply the skills, knowledge and behaviours of an effective coach to your own coaching work.
- Make use of a recommended framework to engage staff in coaching conversations.
- Find opportunities to use coaching in a work context.

Coaching Skills

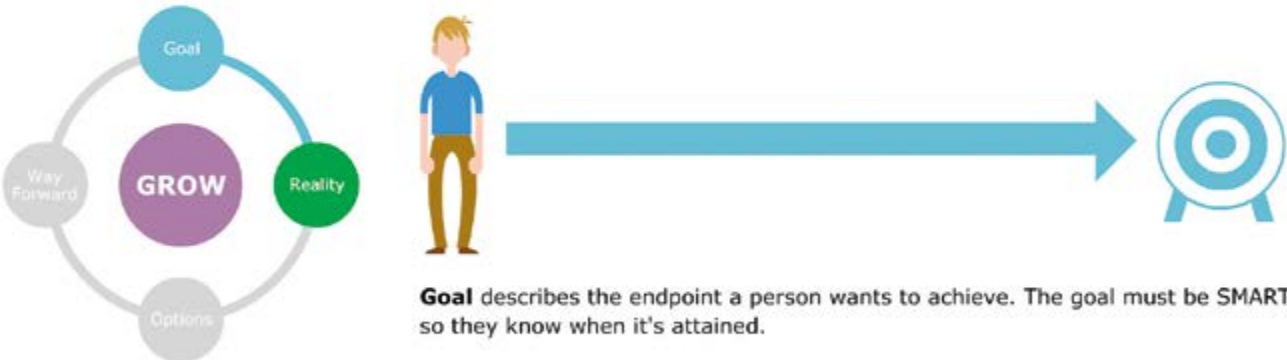


Learning Session ▶ How do I structure my coaching? [MENU](#)

What is GROW?

GROW is a really effective tool for structuring a coaching conversation.

Click on the words below from the GROW acronym, starting with 'Goal', to find about more about this coaching model!



Goal describes the endpoint a person wants to achieve. The goal must be SMART so they know when it's attained.

14 20 ZOOM EDIT

Module Overview:

Identifying your stakeholders - whether they are large or small, individual or organisational - is essential if all the people who could have a bearing on your project's success or failure are to have their voices heard.

Stakeholder analysis allows managers to identify the interests of different groups. It also enables them to find ways of harnessing the support of those in favour of a project or proposed change, while managing the risks posed by stakeholders who are against it.

Undertaking this analysis helps us plan how best to engage with and involve stakeholders during the life of a project. Tailoring the message delivered, the method of communication, and timing of any involvement can help us influence stakeholders and achieve our overall aim of ensuring a project's success.


Learning Objectives:

By the end of this module you should be able to:

- Recognise how engaging with stakeholders can impact on the success of a project.
- Identify and map stakeholder groups.
- Analyse a variety of factors related to stakeholder attitudes and influence.
- Build a project communication plan based on your stakeholder analysis.

This learning will be presented in a number of ways throughout the module. We will examine real life approaches to influencing stakeholders in a health and care context, and offer interactive exercises and opportunities to put in to practice what you have learned.

Influencing Stakeholders



Learning Session ▶ Identifying stakeholders [MENU](#)

Scenario: Waiting room upgrade


When we think about 'customers' in healthcare, we tend to imagine only our patients. However, it's not always as straightforward as that.

Consider the following scenario of a waiting room in an out-patient or primary care facility:

You've heard that your Trust has a small amount of money available to improve this waiting area, and you're going to apply for that money. Alongside some physical changes, you would like to make the whole process better for patients and their carers.

One of the questions you know the decision-making board will ask is: have you asked your stakeholders what they want?

Who are the customers of that waiting room?



🔍 ZOOM EDIT ↺ ⏪ ⏩

Module Overview:

We have designed this learning package to introduce health and care staff to best-practice principles in maximising the potential of the employees they manage or work with, and to help staff develop their understanding in this area. Some people call this process of maximising employee potential 'Talent Management'.

As we move through this course, you'll see this is a bit of an overarching theme of Talent Management. It runs through everything we do.

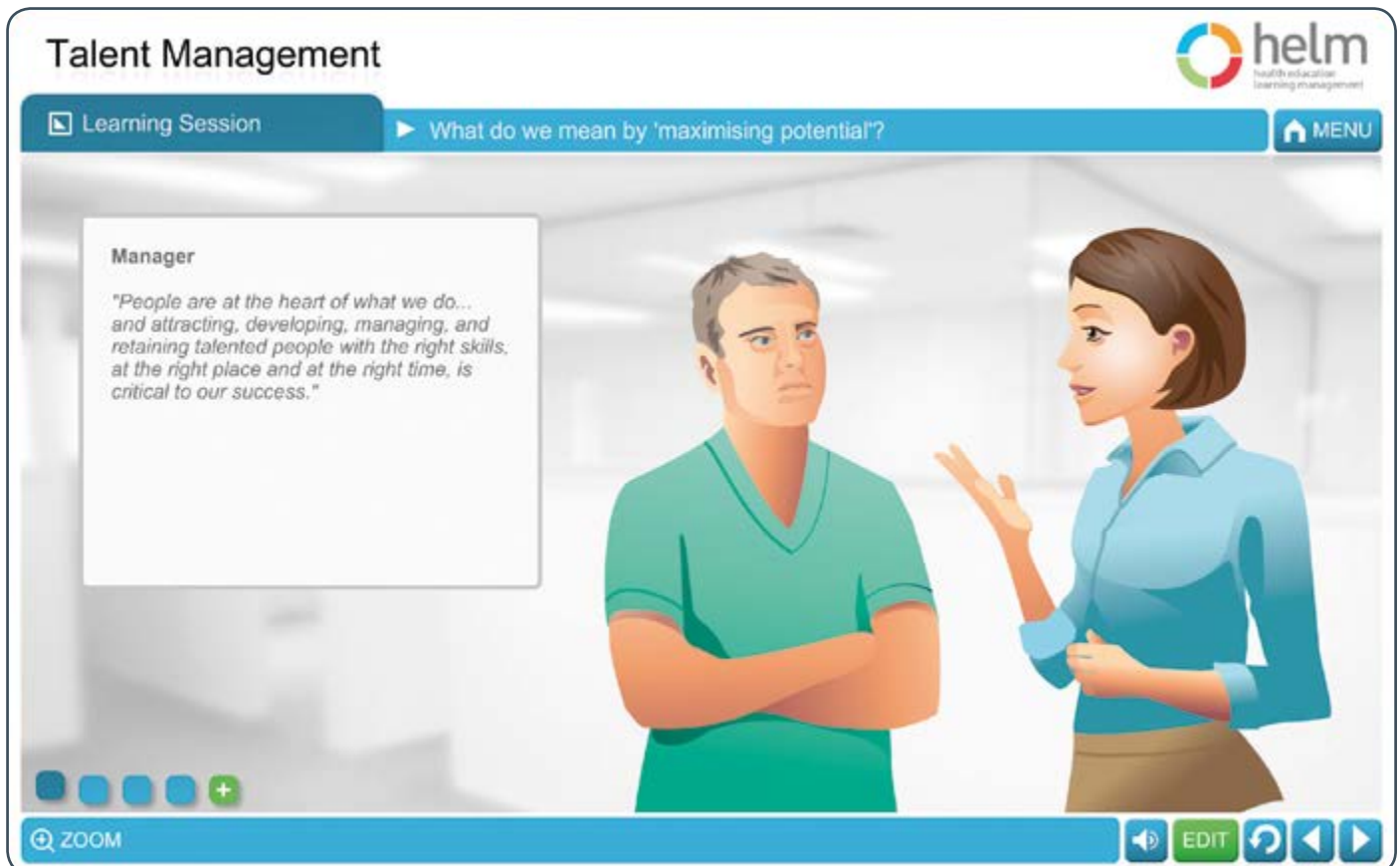
As we explore the different elements of maximising employee potential, we'll be here to explain the concepts and help you through your learning journey. We both hope you enjoy this e-learning package!

Learning Objectives:

By the end of this module you should be able to:

- Recognise the benefits of maximising potential.
- Draw on a range of recruitment practices to help you identify and place talented employees.
- Use the Maximising Performance Conversation Tool for effective performance management.
- Assess the talent of a team and use this to identify appropriate interventions.
- Adopt a range of strategies to develop and motivate employees.
- Manage risks of staff change by putting in place effective succession planning.

This learning will be presented in a number of ways throughout the course. We will examine practical approaches to talent management, and offer interactive exercises and opportunities to reflect on what you have learned.



The screenshot shows an e-learning interface for 'Talent Management'. At the top left, the title 'Talent Management' is displayed. To the right is the 'helm' logo. Below the title, there is a navigation bar with 'Learning Session' and a play button icon, followed by the text 'What do we mean by 'maximising potential?'' and a 'MENU' button. The main content area features a quote from a 'Manager' in a white box: *"People are at the heart of what we do... and attracting, developing, managing, and retaining talented people with the right skills, at the right place and at the right time, is critical to our success."* To the right of the quote is an illustration of a man in a green V-neck shirt and a woman in a blue button-down shirt talking. At the bottom, there is a 'ZOOM' button and a set of navigation controls including a speaker icon, an 'EDIT' button, and arrows for navigation.

PERSONAL PRODUCTIVITY

Module Title: Stress Management

Module Overview:

There is increasing evidence that work-related stress is on the rise. This stress is a major cause of occupational ill health and often leads to sickness, absence, high staff turnover and poor performance.

If work-related stress is affecting you personally, understanding its causes, recognising the signs, and putting strategies in place to avoid or deal with it should help you minimise the impact it has on you.

Gaining a better understanding of work-related stress could also make you a far more effective manager. It can help you recognise management behaviours which have a positive and negative impact on stress at work, and help you improve the support offered to staff who suffer from stress.


Learning Objectives:

By the end of this module you should be able to:

- Describe what stress is.
- Recognise common causes of stress.
- Identify personal stress indicators.
- Use a range of stress management techniques.
- Apply what you have learned within a leadership/management context.

This learning will be presented in a number of ways throughout the course. We will examine practical approaches to understanding stress and stress management techniques. We will offer interactive exercises, as well as opportunities to reflect on what you have learned by applying this to your own experience.

Stress Management




Learning Session ▶ The causes of stress MENU

Overview

If you want to manage your stress effectively, it will help to identify where it comes from.

People can suffer from a range of different types of stress, which occur for a variety of reasons and in different contexts.

Understanding more about the varied nature of stress should make it easier to recognise the signs and symptoms in yourself and others.



STRESS

EXHAUSTION TENSION PANIC DREAD CRISIS PSYCHOLOGY FATIGUE DEPRESSION ANXIETY HORROR PAIN ACCENT PEELVE TIONS RAPHY TRAUMA DEPREY DESTRUCTION EXHAUSTION DEPRESSION EXHAUSTION PAIN ANGER ALARM TRAUMA SYMPTOM ANGER HORROR CONTROL EMOTIONS

ZOOM EDIT

Module Overview:

When work is frantic, dividing your time between lots of different tasks means you tend to achieve less. It can leave you feeling hurried and unfocused.

The key to managing your time effectively is to have a clear understanding of what the demands are. This can help you assess what's important, and which tasks will get you closer to your goals.

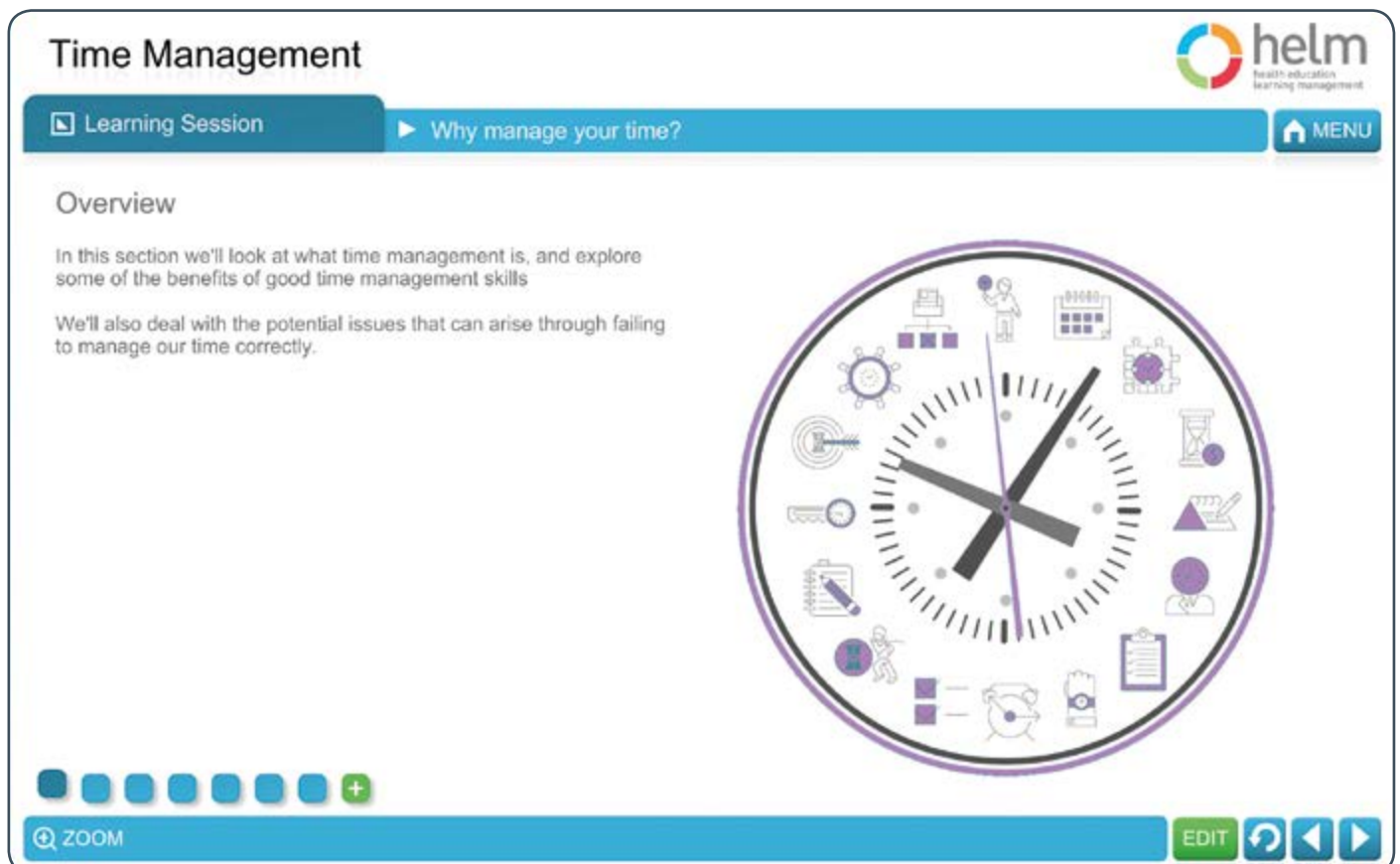
You can take advantage of proven techniques to help you balance these demands, and by developing good time management skills you can achieve a lot more in much less time. This can have a positive impact on your workload.

For those in leadership roles, effective time management is vital. It helps you manage your time so you're more likely to achieve your goals - and in a way that benefits your whole team.

Learning Objectives:

By the end of this module you should be able to:

- Distinguish between important and urgent activities.
- Draw on a range of techniques for prioritising tasks.
- Take steps to manage your team's use of time.
- Ensure effective use of time at a leadership level.



The screenshot shows a digital learning interface for a 'Time Management' module. At the top left, the title 'Time Management' is displayed. To the right is the 'helm' logo. Below the title, there are two navigation buttons: 'Learning Session' (with a play icon) and 'Why manage your time?' (with a right arrow icon). A 'MENU' button with a house icon is on the far right. The main content area is titled 'Overview' and contains two paragraphs of text. The first paragraph states: 'In this section we'll look at what time management is, and explore some of the benefits of good time management skills'. The second paragraph states: 'We'll also deal with the potential issues that can arise through failing to manage our time correctly.' To the right of the text is a large, stylized clock face. The clock has a purple border and is filled with various icons representing time management concepts such as a calendar, a person, a gear, a target, a checklist, a person with a gear, a person with a clock, a person with a document, a person with a clock, a person with a document, a person with a clock, and a person with a document. At the bottom left, there is a 'ZOOM' button with a magnifying glass icon. At the bottom right, there are several control buttons: 'EDIT', a refresh icon, a back arrow, and a forward arrow.

Module Overview:

Patients give us personal and confidential information about themselves all the time. They trust us to be careful in the way we use this information, and keeping that trust is vitally important.

Being able to access the patient information we need when we need it is also essential - so that we can provide our patients with quality care and so that we can deliver services efficiently.

Information governance ensures we achieve both these by providing a framework for safely and efficiently handling information. It helps us manage patient information so that we can do our jobs, helps us build relationships of trust with the people we care for, and helps us meet all our legal requirements around the use of information.

Learning Objectives:

By the end of this module you should:

- Apply the principles of information governance to your everyday work.
- Ensure you provide a confidential service to your patients.
- Comply with your legal obligations under the Data Protection Act and the duty of confidentiality.
- Use the Caldicott Principles to help you work with patient information in a responsible way.
- Explain how you can help the Trust meet its responsibilities in the Freedom of Information Act.
- Work in ways that follow information security guidelines and ensure effective record keeping.
- Access policies, procedures and further information on information governance.

Information Governance



Learning Session ▶ Patient information [MENU](#)

The information lifecycle

When you think about how patient information is used, it's helpful to picture an information lifecycle.

Both you and the Trust will be legally and ethically responsible for how patient information is used and managed throughout this lifecycle.

Click on each stage of the cycle below for more information



Collection

We gather information about patients which we use directly in the provision of appropriate healthcare, and indirectly, for research or audit purposes.

ZOOM EDIT

Module Overview:

Protecting and supporting equality, diversity and human rights has an impact on all of us - patients and staff alike. It can help build a fairer workplace, improves access to our services, and can create a more inclusive and positive environment for everyone who works at or visits the Trust.

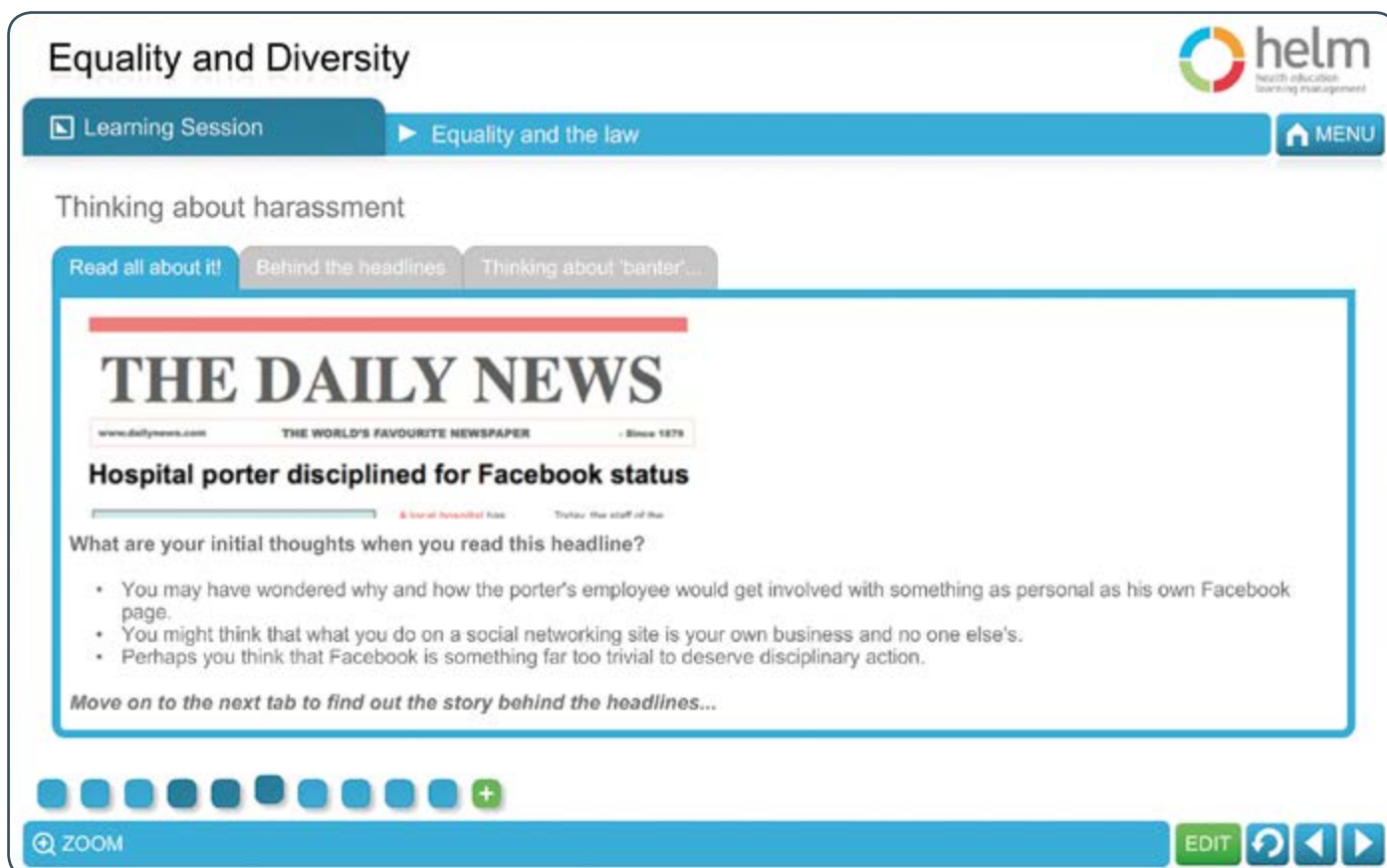
Understanding the fundamentals of people's rights and how to identify discrimination and harassment will help us encourage positive behaviour, challenge unacceptable behaviour, and raise any concerns we have about equality and diversity.

The Trust recognises the importance of equality and diversity and has put a range of services, provision and principles in place to enhance fairness and inclusion. But as individuals, we can also play a vital role in making sure that everyone feels valued and respected, whatever their difference.

Learning Objectives:

By the end of this module you should be able to:

- Recognise the importance of equality, diversity and human rights, and how they benefit us
- Understand the terms relating to equality and diversity, particularly within the health sector
- Understand what you can do to promote equality and diversity
- Know what to do if you have concerns about behaviour or practices that could undermine equality and diversity in the workplace
- Be aware of how the Trust supports and promotes equality and diversity



The screenshot shows a learning session interface. At the top, the title 'Equality and Diversity' is displayed. Below it, there are navigation tabs: 'Learning Session' (selected) and 'Equality and the law'. A 'MENU' button is also visible. The main content area is titled 'Thinking about harassment' and contains three sub-tabs: 'Read all about it!', 'Behind the headlines', and 'Thinking about 'banter'...'. The 'Read all about it!' tab is active, showing a news article from 'THE DAILY NEWS' with the headline 'Hospital porter disciplined for Facebook status'. Below the headline, there is a question: 'What are your initial thoughts when you read this headline?' followed by a list of bullet points: 'You may have wondered why and how the porter's employee would get involved with something as personal as his own Facebook page.', 'You might think that what you do on a social networking site is your own business and no one else's.', and 'Perhaps you think that Facebook is something far too trivial to deserve disciplinary action.'. At the bottom of the article, it says 'Move on to the next tab to find out the story behind the headlines...'. The interface also includes a 'ZOOM' button, an 'EDIT' button, and navigation arrows.

Module Overview:

Manual handling is one of the commonest causes of injury at work.

This course will help you understand why these injuries are so common. It will highlight the importance of maintaining good posture, identify common risks of injury, and promote good practice in safer manual handling.

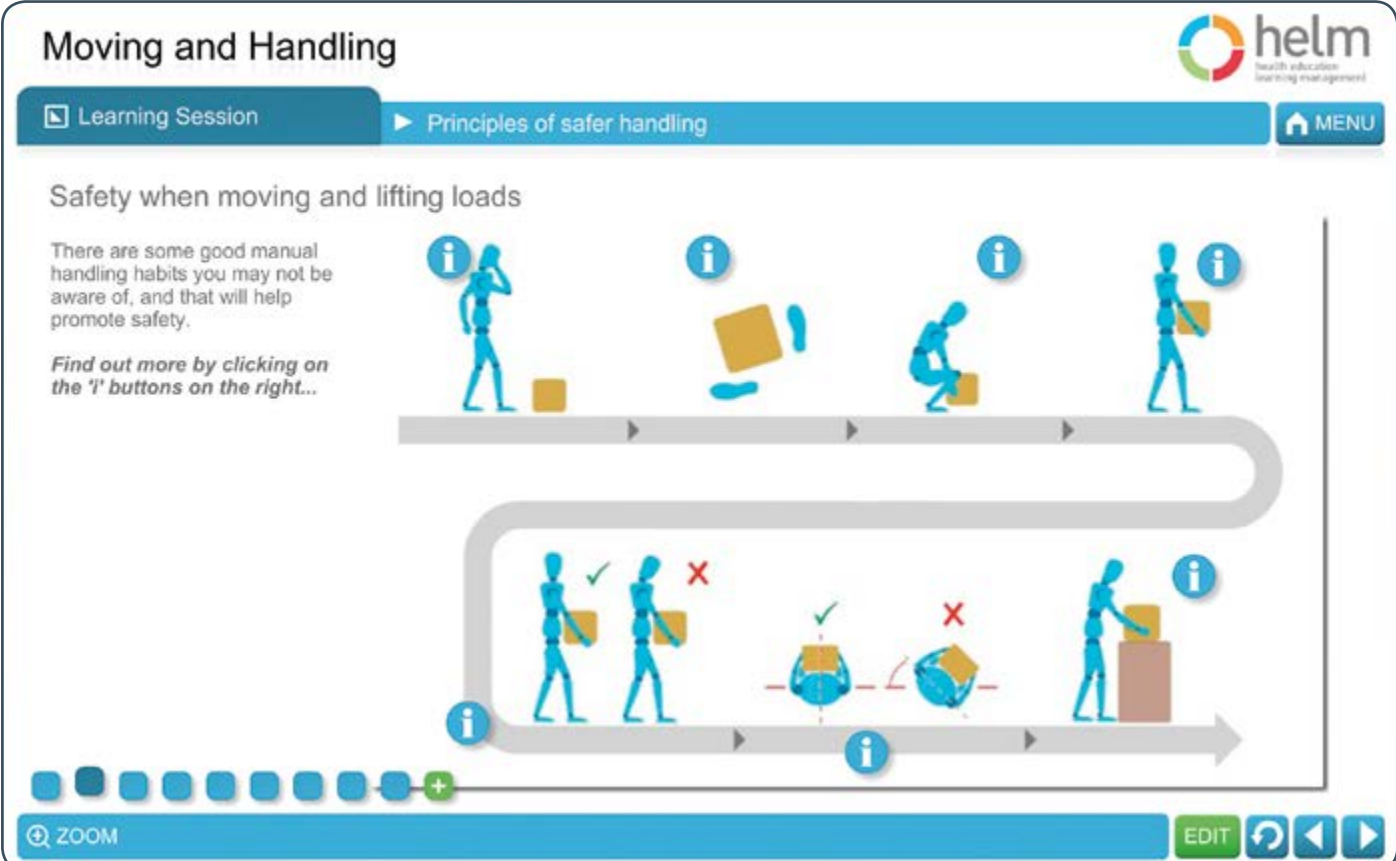
It will also look at your responsibilities and those of the Trust in relation to manual handling at work.

Manual handling is "the transporting or supporting of a load by hand or by bodily force." *Manual Handling Operations Regulations, 1992.*

Learning Objectives:

By the end of this module you should:

- Identify good posture and explain how this relates to back care
- Recognise manual handling risk factors and how injuries occur
- Understand the organisation's use of risk-management systems and use these in your work
- Put into practice the principles of safer handling
- Undertake manual handling tasks in ways that protect your back
- Understand employers and employees' responsibilities according to Health and Safety legislation



Moving and Handling

helm
health education
learning management

Learning Session ▶ Principles of safer handling MENU

Safety when moving and lifting loads

There are some good manual handling habits you may not be aware of, and that will help promote safety.

Find out more by clicking on the 'i' buttons on the right...

The illustration sequence shows: 1. A person standing with a box on the floor, marked with an 'i'. 2. A person bending over to pick up a box, marked with an 'i'. 3. A person carrying a box, marked with an 'i'. 4. A person carrying a box with a red 'X' indicating poor posture. 5. A person lifting a box from the floor, marked with an 'i'. 6. A person lifting a box from a low surface, marked with a red 'X'. 7. A person lifting a box from a high surface, marked with an 'i'. 8. A person stacking boxes, marked with an 'i'.

ZOOM EDIT

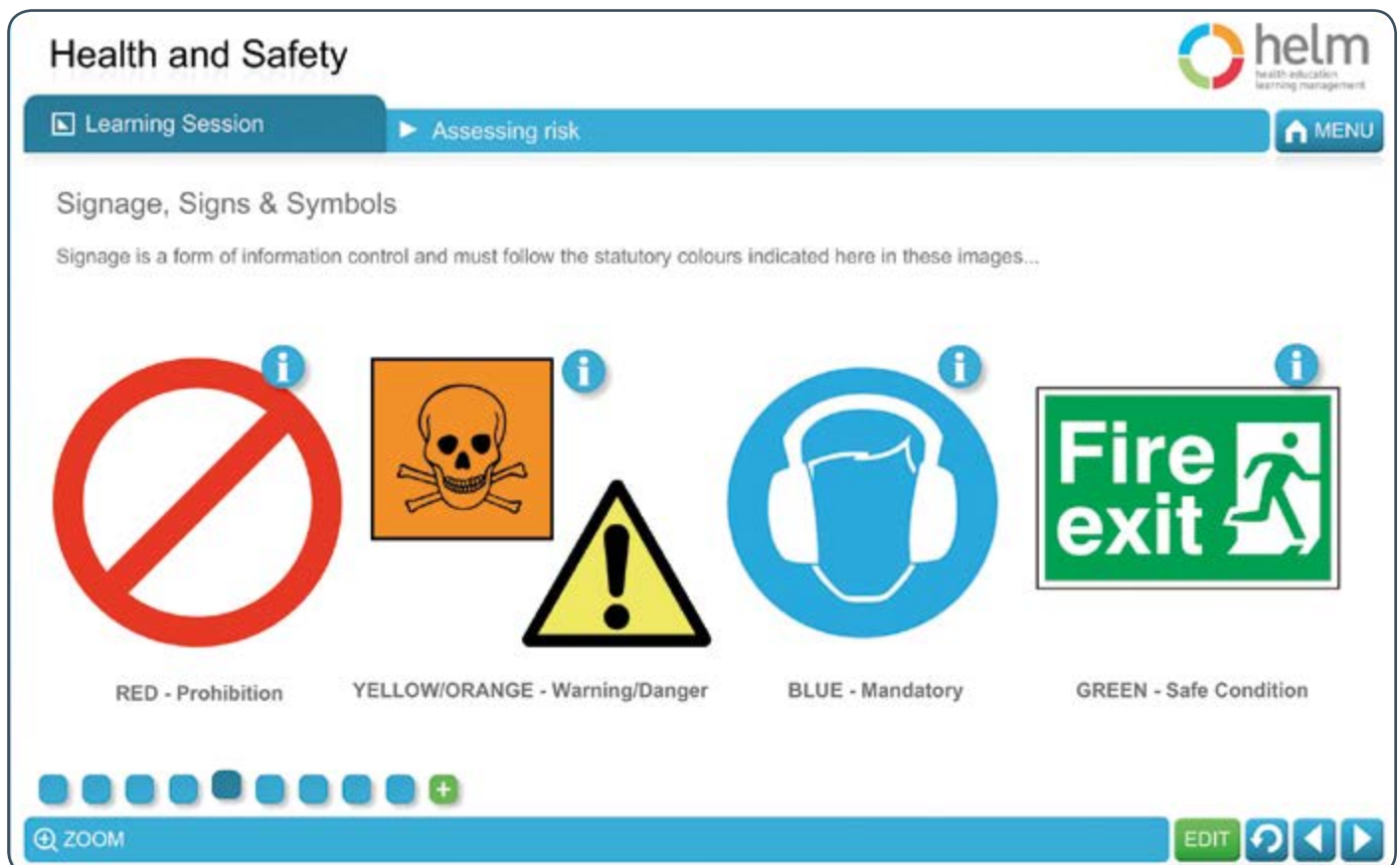
Module Overview:

The module will provide staff with an introductory framework of health and safety information and signpost staff to related support within the organisation.

Learning Objectives:

By the end of this module you should be able to:

- The Trust's commitment to delivering services safely
- Your responsibilities and the responsibilities of others
- How you can apply and promote safe working practice
- Consultation arrangements
- Where you can find Health and Safety documentation
- How health and safety arrangements are implemented
- Hazards, risks and risk assessments
- Managing identified risks using preventative and protective measures
- Responding to accidents and sudden illness
- The importance of, and arrangements for, reporting near-miss events, accidents, illness and concerns and how the Trust uses this information



The screenshot shows a digital learning interface. At the top, the title 'Health and Safety' is displayed. Below it, a navigation bar includes 'Learning Session' and 'Assessing risk'. The main content area is titled 'Signage, Signs & Symbols' and contains a text block: 'Signage is a form of information control and must follow the statutory colours indicated here in these images...'. Below this text are four examples of safety signs, each with an information icon (i) in the top right corner. From left to right: 1. A red prohibition sign (a red circle with a diagonal slash). 2. A yellow/orange warning sign (a square with a skull and crossbones) and a yellow triangular warning sign (a triangle with a black exclamation mark). 3. A blue mandatory sign (a blue circle with a white icon of a person wearing a hard hat). 4. A green safe condition sign (a green square with the text 'Fire exit' and a white icon of a person running). Below the signs are four labels: 'RED - Prohibition', 'YELLOW/ORANGE - Warning/Danger', 'BLUE - Mandatory', and 'GREEN - Safe Condition'. At the bottom of the interface, there is a 'ZOOM' control, an 'EDIT' button, and navigation arrows.

Module Overview:

Infection Prevention is a priority. The Health and Social Care Act (2010) - Code of Practice, makes it clear that infection prevention is everyone's responsibility and must be embedded into practice.

The 3rd National Prevalence Survey carried out in 2006, revealed that 8.2% of patients acquire an infection during their stay in hospital


It is impossible to prevent all infections, but by having an understanding of, and adhering to evidence based infection prevention guidance in your daily practice, we can reduce the risk to our patients.

Learning Objectives:

By the end of this module you should be able to:

- Describe the Trust's and your own responsibilities in terms of current infection prevention legislation
- Obtain information about infection prevention within the Trust
- Understand what is meant by the term healthcare associated infections
- Describe the chain of infection and how to 'break the chain'
- Appreciate the risks associated with environmental contamination
- Conduct an infection risk assessment
- Manage patients with specific alert organisms

Infection Prevention - Clinical



Learning Session Healthcare associated Infections MENU

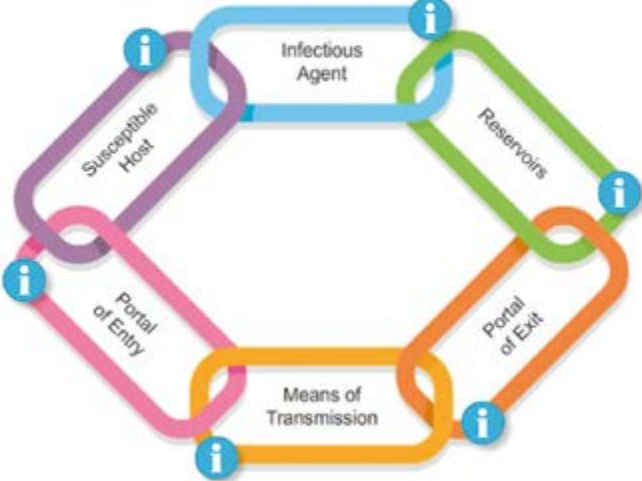
The chain of Infection

As a healthcare professional, it is important to understand 2 things about infection:

- The various ways infection can be transmitted
- How to break the chain of infection

The links of the chain show how organisms are transferred and where healthcare staff can break the chain and stop infection spreading

Click on each of the information buttons on each link for further information...



Zoom EDIT

Module Overview:


Infection Prevention is a priority. The Health and Social Care Act (2008) - Code of Practice, makes it clear that infection prevention is everyone's responsibility.

Learning Objectives:

By the end of this module you should be able to:

- Know how to contribute to infection prevention
- Have knowledge of and demonstrate the standard infection prevention precautions relevant to their role including:
 - Hand hygiene
 - Personal Protective Equipment (PPE)
 - Management of occupational exposure
 - Management of the Environment
- Recognise and act when their personal fitness to work may pose a risk of infection to others.

Infection Prevention - Non Clinical



Learning Session ▶ Hand hygiene MENU


The importance of hand hygiene

Hand hygiene is the primary measure to reduce infections. Clean hands prevent patient suffering and saves lives.

The content of this section is based on the [World Health Organization Guidelines on Hand Hygiene in Health Care \(2009\)](#) following a review of evidence on hand hygiene in health care.

The guideline details the science and ranks the evidence on which they are based. To help you deliver clean, safe care we have picked out the key points.

Hand hygiene is not an option it's an expectation.



ZOOM EDIT

Module Overview:

This has been designed to develop your understanding of safeguarding adults and help you apply this to your own professional practice.

The course will look at key safeguarding legislation and how this defines and informs our work with adults at risk. It will explore what safeguarding means, how we define abuse, along with the nature and scope of adult abuse in the context of health and social care. We will look at how information is shared between agencies and what to do if you suspect abuse is occurring.


Finally, we will examine the importance of dignity and respect, what we mean by person-centred care, and the need for safeguarding to reflect the needs and wishes of the individuals who use our services.

Learning Objectives:

By the end of this module you should be able to:

- Understand the nature and scope of abuse in relation to adults at risk
- Recognise the importance of dignity and respect and what is meant by individualised, person-centred care
- Know the arrangements for raising a concern of abuse and how information is shared among relevant agencies
- Identify the legislation, policies and procedures which relate to safeguarding adults, both at a national and local level
- Know how to apply the basic principles of helping people to keep themselves safe
- Know how to support people to think about risk when exercising choice and control
- Know the actions to take if they experience barriers in alerting or referring to relevant agencies
- Understand more about the 'Prevent' counter-terrorism strategy and how this relates to NHS staff



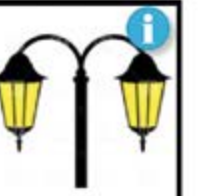



Safeguarding Adults



Learning Session ▶ Guarding against abuse [MENU](#)

Where does abuse happen?

Adults at risk of abuse and/or neglect can be found across all social and cultural groups, diverse environments and settings.

This means that the perpetrators of abuse are equally diverse. They could be:

- friends
- relatives
- other service users
- professional staff such as nurses and doctors
- support/care workers
- neighbours
- colleagues

ZOOM EDIT

Module Overview:

Unfortunately, many children don't grow up in ideal conditions and a smaller, but significant, number of children and young people suffer abuse. Cruelty to a child can be hard to recover from and may have an emotional impact that lasts longer than any physical harm they suffer.

Recognising early that a child is being maltreated, and sharing this information with other agencies, helps us protect vulnerable children and offer support to families in need of help.


Whatever your role at the Trust - whether or not you work directly with children - you have a responsibility to raise any concerns that you have about a child's welfare and to report any potential maltreatment.

Learning Objectives:

By the end of this module you should be able to:

- Recognise the importance of children's rights in safeguarding
- Identify the different types of maltreatment and recognise the signs
- Understand the potential impact of a parent or carer's physical and mental health on a child
- Understand the risks associated with the internet
- Raise safeguarding concerns following the Trust's standard procedures
- Know what to do if you experience any barriers in raising concerns
- Explain the importance of sharing information appropriately
- Find local policies and procedures in relation to safeguarding children
- Demonstrate and maintain a child centred focus
- Understand the meaning of commonly used terminology

Safeguarding Children - Level 1



Learning Session ▶ The principles of safeguarding MENU


Parental responsibility

Sometimes, when working with children, you may need to clarify who is responsible for looking after them.

The person with parental responsibility is the person responsible for a child's well-being. They will make all decisions about their education, their religion, their medical treatment and where they live.

Who has 'parental responsibility'?
In law, being a person with parental responsibility is not always the same as being a biological parent, being named on the birth certificate and raising a child.

In most cases, a child's biological parents will have these rights and responsibilities of parenthood. But sometimes the court may take over the responsibility for a child - for example, where children live with foster parents or in residential homes, or are adopted.



26 ZOOM EDIT ↺ ↻ ↷

Module Overview:

Everyone who works at the Trust has a responsibility to keep children safe.

This course provides information and advice on how to recognise the maltreatment of children and young people. It explains how to follow appropriate Trust and LSCB procedures to refer them for protection and support.

This course is for staff who have regular contact (or a period of intense but irregular contact) with children, young people and/or parents and carers. This includes all health clinical staff.


This is the Level Two e-learning module. Before completing this course, you must have already completed Level One.

Learning Objectives:

By the end of this module you should be able to:

- Recognise the importance of a child's best interests in safeguarding
- Explain how maltreatment can impact on a child's health, well-being and development
- Recognise the child and parent vulnerability factors that increase the risk of maltreatment
- Understand the potential increased risks and needs of 'looked after' children
- Raise safeguarding concerns following the Trust's standard procedures
- Explain good practice in sharing personal information
- Describe how we learn lessons and improve safeguarding services

Safeguarding Children - Level 2



Learning Session ▶ Protecting children

MENU


Overview

Although children are generally safer these days, a worrying number are still at risk of harm or are not adequately cared for. This maltreatment can have a profound effect on a child's health, well-being, development and their future potential.

The safeguarding system coordinates the work of a range of people and agencies who work with children in order to ensure that individual children and young people have the protection and support they need to thrive.

In this section we will explore:

- The scale of child maltreatment in the UK
- The impact abuse and neglect can have on children and young people
- How the best interests of the child are at the heart of the safeguarding system
- The range of organisations that work together to protect children



Zoom EDIT

Module Overview:

This e-learning module includes a range of learning experiences and activities to help you develop your understanding of conflict resolution.

You will be given the opportunity to reflect on some of the issues raised, and check you have understood. At the end of each section there will be a self-assessment quiz for you to test your knowledge.

When you finish the course, you will be asked to demonstrate your understanding of conflict resolution by completing an assessment.

Learning Objectives:

By the end of this module you should be able to:

- Explain the importance of verbal and non-verbal communication, and the roles they play in a conflict situation
- Identify common barriers to communication, and utilise strategies for effective communication and conflict resolution
- Identify common behaviour patterns and warning signs within a conflict situation
- Understand the role of NHS Protect in managing security across the organisation



The screenshot shows the user interface for the 'Conflict Resolution' module. At the top left, the title 'Conflict Resolution' is displayed. To the right is the 'helm' logo. Below the title, there are two navigation tabs: 'Learning Session' (selected) and 'Managing conflict'. A 'MENU' button is located on the right. The main content area is titled 'Overview' and contains the following text:

So far, we have looked at communication in some detail - the different ways we communicate, common barriers to communication, and how the ways we express ourselves shape the quality of our interactions with others.

Let's now apply some of our knowledge of communication to conflict situations, and conflict resolution strategies in particular.

In this section we will explore:

- common causes of conflict
- patterns of behaviour during conflict situations
- how to identify and manage risk
- de-escalation techniques
- the concept of 'reasonable force'

To the right of the text is an illustration of a group of colorful 3D human figures standing on a reflective surface. Each figure has a speech bubble above it, representing communication. The bottom of the interface features a blue bar with a 'ZOOM' button, a row of small blue square icons, and a 'ZOOM' label. On the right side of this bar are buttons for 'EDIT', a refresh icon, and navigation arrows.

Module Overview:


This e-learning session outlines the procedures, roles and responsibilities of staff regarding Fire Safety.

Learning Objectives:

By the end of this module you should be able to:

- Explain the Fire Triangle and common causes of fire
- Describe the fire alarm and evacuation procedure
- Identify staff roles and responsibilities, fire risk reduction, and the benefits of good housekeeping
- Demonstrate what to do if there is a fire
- Describe the actions necessary to control a fire
- Identify the correct fire extinguisher to use according to the type of fire

Fire Safety



Learning Session ▶ Roles, responsibilities and risk MENU


Keep access routes clear

All main hospital access routes must be kept clear during an intermittent (Stage 2) fire alarm. This is to ensure the emergency services have the necessary access and the hospital can evacuate patients from affected areas.

Any members of staff travelling along a main access route should enter the nearest ward or department and remain there throughout the duration of the alarm.

Click on the buttons below to clear the access route

Clear Access Route



🔍 ZOOM EDIT ↺ ▶

Module Overview:


Welcome to Slips, Trips and Falls elearning for Nursing Staff. This course is designed to give you an introduction to the knowledge you will need to manage older patients at risk of falls and after falling in hospital.

Learning Objectives:

By the end of this module you should be able to:

- To understand the impact of falls on your patient
- To recognise the importance of balancing patient safety, independence, rehabilitation, dignity and patient choice
- To learn how to identify and act on patient risk factors to reduce the likelihood of falls
- To identify environmental risk factors and create a safer environment

Slips, Trips and Falls



Learning Session Overview MENU

The impact of falls 2

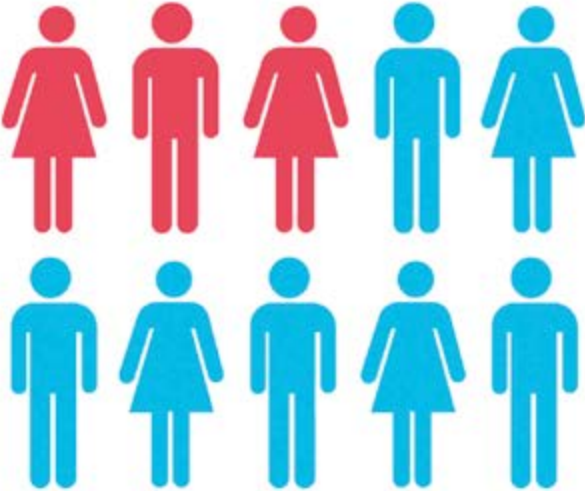
Around 14% of inpatients will have been admitted after a recent fall. In addition, many other inpatients are at increased risk of falling. Risk factors for this include:

- Older patients.
- Patients with long-term conditions and disabilities.
- Those with acute illness.
- Those with comorbidities.
- Patients who have had an operation that has affected the mobility.
- Patients affected by alcohol.

Being in hospitals puts these vulnerable patients at even greater risk of falling due to:

- The unfamiliar environment.
- Side effects of investigations, medication and treatment.

Perhaps the most worrying statistic of all is that if a patient fractures a hip while already ill in hospital, there is a three in ten chance that they will not survive, and only a one in ten chance of getting back to their original independence.



30 ZOOM EDIT

Module Title: Slips, Trips and Falls Training - Medical staff

Module Overview:

Welcome to this course CareFall: Reducing inpatient falls risks and post fall management. This course is designed to give you an introduction to the knowledge you will need to manage older patients at risk of falls and after falling in hospital.

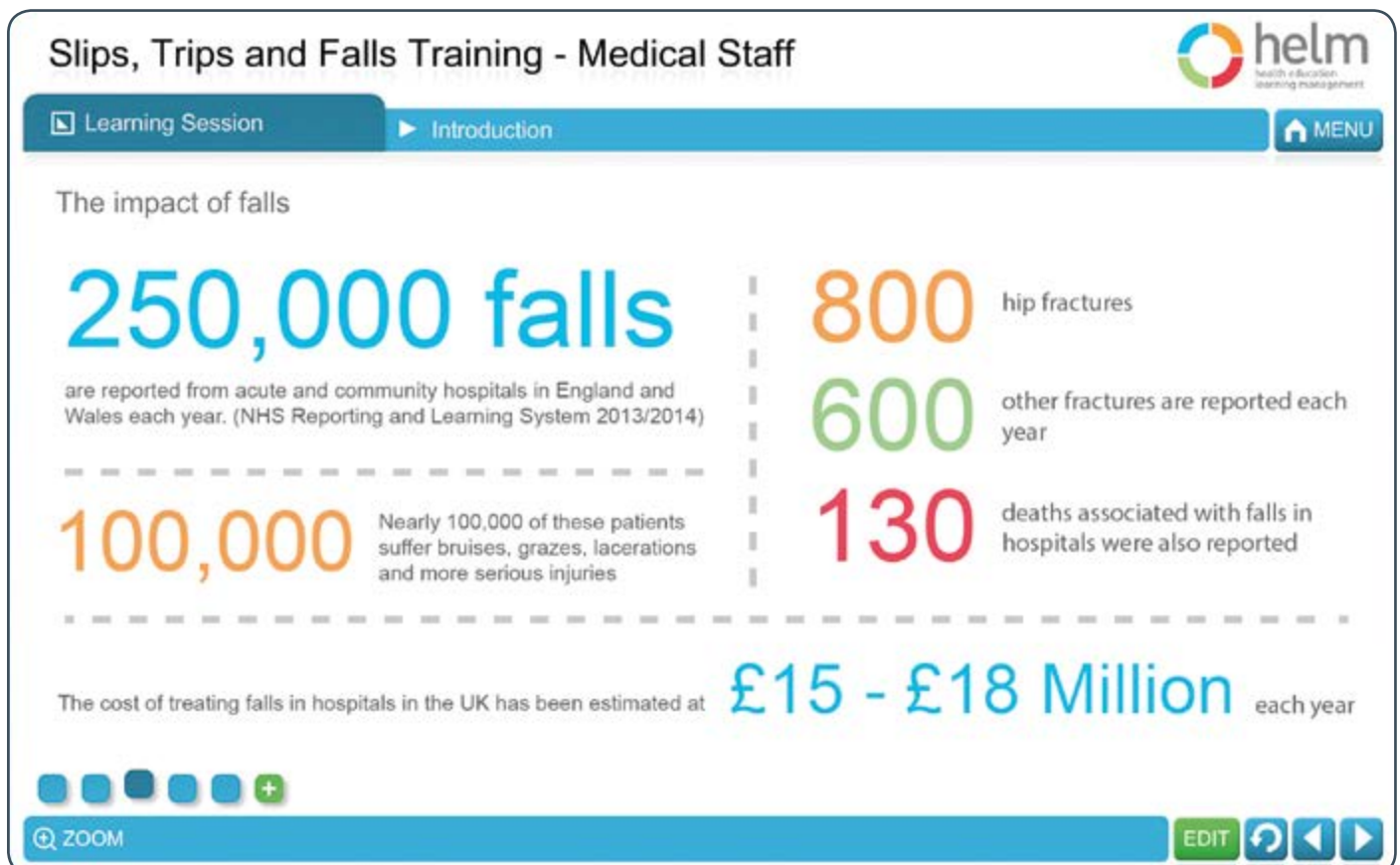
This course has primarily been developed for foundation level doctors working in hospitals; it complements a course previously produced by the Royal College of Physicians and NHS England for hospital-based nurses.

It should take about an hour to complete the course and you can stop and start as you wish.

Learning Objectives:

By the end of this module you should be able to:

- Understand the impact of falls on your patients.
- Describe the importance of medication in relation to falls and medications that can increase the risk of falls.
- List and describe the cardiovascular causes of falls.
- Understand the initial management of patients post-fall.
- Identify environmental risk factors and create a safer environment for in patients.



The screenshot shows a digital learning session interface. At the top, the title 'Slips, Trips and Falls Training - Medical Staff' is displayed. Below the title, there are navigation tabs for 'Learning Session' and 'Introduction'. The main content area features a title 'The impact of falls' followed by several statistics: '250,000 falls' are reported from acute and community hospitals in England and Wales each year; '100,000' patients suffer bruises, grazes, lacerations, and more serious injuries; '800' hip fractures and '600' other fractures are reported each year; and '130' deaths associated with falls in hospitals were also reported. At the bottom, it states 'The cost of treating falls in hospitals in the UK has been estimated at £15 - £18 Million each year'. The interface includes a 'MENU' button, a 'ZOOM' control, and 'EDIT' and navigation buttons.

Slips, Trips and Falls Training - Medical Staff

helm health education learning management

Learning Session Introduction MENU

The impact of falls

250,000 falls are reported from acute and community hospitals in England and Wales each year. (NHS Reporting and Learning System 2013/2014)

100,000 Nearly 100,000 of these patients suffer bruises, grazes, lacerations and more serious injuries

800 hip fractures

600 other fractures are reported each year

130 deaths associated with falls in hospitals were also reported

The cost of treating falls in hospitals in the UK has been estimated at **£15 - £18 Million** each year

ZOOM EDIT

Module Overview:

A complaint is any expression of dissatisfaction about the standards of patient care, which a patient/relative believe may have affected them negatively.

Sometimes a comment, observation or a request for more information can be viewed as a complaint but should not be.

Ask yourself: Is the person only raising a query or asking you to give them information?

Resolving queries and concerns in the early stage can prevent things from escalating into formal complaints.

Learning Objectives:

By the end of this module you should be able to:

- Ensure all staff are focused on improving delivering high quality care.
- Ensure staff know how to effectively and efficiently manage complaints when things go wrong.
- Ensure the complaints process is integral to the delivery of care.
- Recognise situations that might lead to concern or dissatisfaction.
- Seek to remedy concerns/complaints at the earliest opportunity.
- Feel empowered to deal with and resolve concerns/complaints at a local level.
- Demonstrate an understanding of local complaints process. Identify actions arising from complaints, ensuring that practice and systems are improved and developed accordingly.



Module Overview:

In delivering healthcare services, we have a responsibility to improve quality of care for our patients. We all have a role to play in this by contributing to the planning, development, delivery and maintenance of the highest standards of care.

An important part of delivering high quality care is knowing how to describe what quality looks like in a healthcare context and how improvements in this can be measured.

This is the first introductory module, in a series of related modules on Quality Improvement. It is designed to inform staff about some of the concepts that underpin Quality Improvement, and support them in actively participating and collaborating in improvement processes.

Learning Objectives:


By the end of this module you should be able to:

- Describe quality and apply in healthcare.
- Define what quality improvement is and explain why it is important.
- Distinguish between quality improvement and quality assurance.
- Be able to introduce quality improvement tools into your work.

Throughout the course, you will find this information presented in a number of ways: text, interactive exercises, and opportunities to put what you have learned into practice.

The first section of this course explores what we mean by 'quality' in a healthcare setting...

Introduction to Quality Improvement



Learning Session ▶ What is quality in healthcare? MENU

Quality healthcare in practice


Having identified the six dimensions of quality in clinical care, it is important to be able to apply this understanding in practical terms to real life situations.

Think about how the patient in the case study below would want to experience high quality healthcare.

Peggy is 83 and lives independently in her own bungalow, despite worsening memory and mobility.

One evening Peggy falls on her way to the toilet. She lies in the hallway all night, unable to move due to the pain in her hip. A neighbour calls by the next morning and, getting no response, immediately phones the police who break their way in.

Next



ZOOM EDIT

Module Title: Mentorship for Nurses and Midwives

Module Overview:

The University Hospitals of Leicester (UHL) NHS Trust is a teaching hospital and we expect all our qualified nursing & midwifery staff to have a role in supporting learners and colleagues, to help them develop their professional competence and confidence.

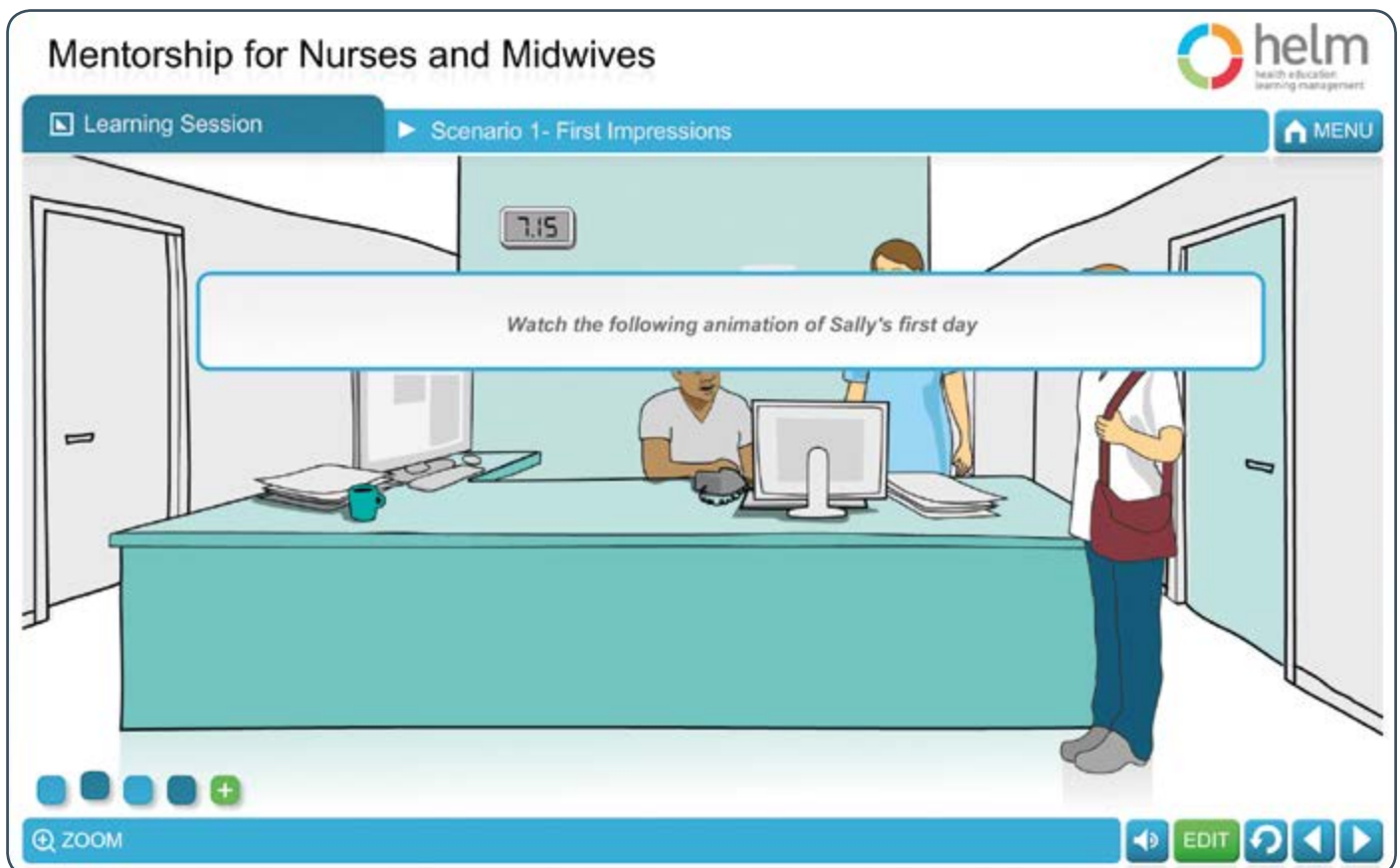
UHL is committed to ensuring all our registered nursing and midwifery mentors are working within the Nursing and Midwifery Councils (NMC) published standards to support learning and assessment in practice (SLAiP 2008), NMC Code and UHL policies (Mentorship Policy for Nursing & Midwifery Staff).

This e-learning package is designed to supplement your annual face - face mentor updating. Our purpose is to ensure all our mentors are receiving consistent mentorship information to enable them to support learners to a high level of competence and knowledge. This e-learning package will support NMC triennial review and provide evidence towards your NMC revalidation. It will also give the UHL the necessary evidence to ensure compliance with professional body requirements (SLAiP standards), therefore ultimately protecting the public.

Learning Objectives:

By the end of this module you should be able to:

- Understand how the different roles of Registrant, Mentor, Sign Off Mentor, Practice Teacher & Teacher, support learners in practice settings.
- Have a greater understanding of how the NMC Development framework will support your role as a mentor and provide evidence for assuring the NMC and the Trust that you are fit to support our learners in practice.
- Understand the assessment process and the evidence required to make judgements about competence.
- Understand the accountability and responsibility of the Mentor & Sign off Mentor in providing evidence with regard to making decisions about achievement of proficiency at progression points.
- Scenarios are provided to highlight some of the issues that are raised when supporting learners in practice.



The screenshot shows a digital learning environment. At the top, the title 'Mentorship for Nurses and Midwives' is displayed. Below the title, there are navigation elements: 'Learning Session' and 'Scenario 1- First Impressions'. A 'MENU' button is also visible. The main content area features an illustration of a reception desk with a staff member and a visitor. A text box overlaid on the illustration reads: 'Watch the following animation of Sally's first day'. At the bottom of the interface, there are control buttons for 'ZOOM', 'EDIT', and navigation arrows.

Module Overview:

- Overseas visitors (OSVs) are individuals who are not normally resident in the UK.
- Overseas visitors may be liable to pay for any treatment not received within the Emergency Department.
- The Trust has a legal obligation to identify OSVs; determine whether they are liable to pay for their treatment; and if they are - recover the costs.
- The Trust should only provide emergency treatment to liable OSVs who will not or cannot pay for their treatment.
- The Trust bills OSVs visitors for more than £1 million each year.

The risks are:

- The Trust does not identify liable OSVs.
- The Trust provides non-emergency treatment to liable OSVs.
- OSVs will not or cannot pay.
- OSVs may be fraudulently trying to obtain free NHS treatment.

Learning Objectives:

By the end of this module you should be able to:

- Understand your role and responsibility in relation to identifying OSVs.
- Understand the different statuses of OSVs and when OSVs are liable to pay for their treatment.
- Understand the treatment decision relating to OSV.



The screenshot shows a digital learning interface. At the top, the title 'Charging Overseas Visitors' is displayed. Below the title, there are navigation elements: 'Learning Session' and 'Overseas visitors'. A 'MENU' button is also visible. The main content area features a world map background. The text reads: 'Who is classified as an OSV? Who can be classified as an overseas visitor? It is not simply about nationality...'. A highlighted box contains the definition: 'An overseas visitor is a person who is not 'ordinarily resident' in the UK ...they may incur a charge for treatment'. Below this, it lists categories of overseas visitors: 'The following could all be overseas visitors: UK National who lives permanently overseas, European Economic Area (EEA) National, non-EEA-National'. At the bottom, there are controls for 'ZOOM', 'EDIT', and navigation arrows.

Module Overview:

"An urgent appeal for adopting...some uniform system of publishing the statistical records of hospitals. In all hospitals, even in those which are best conducted, there is a great and unnecessary waste of life.... In attempting to arrive at the truth, I have applied everywhere for information, but in scarcely an instance have I been able to obtain hospital records fit for any purpose of comparison.... Improved statistics would tell us more of the relative value of particular operations and modes treatment."

- Florence Nightingale in *Notes on Hospitals*, London: Longman, Green, Roberts, Longman and Green 1863.

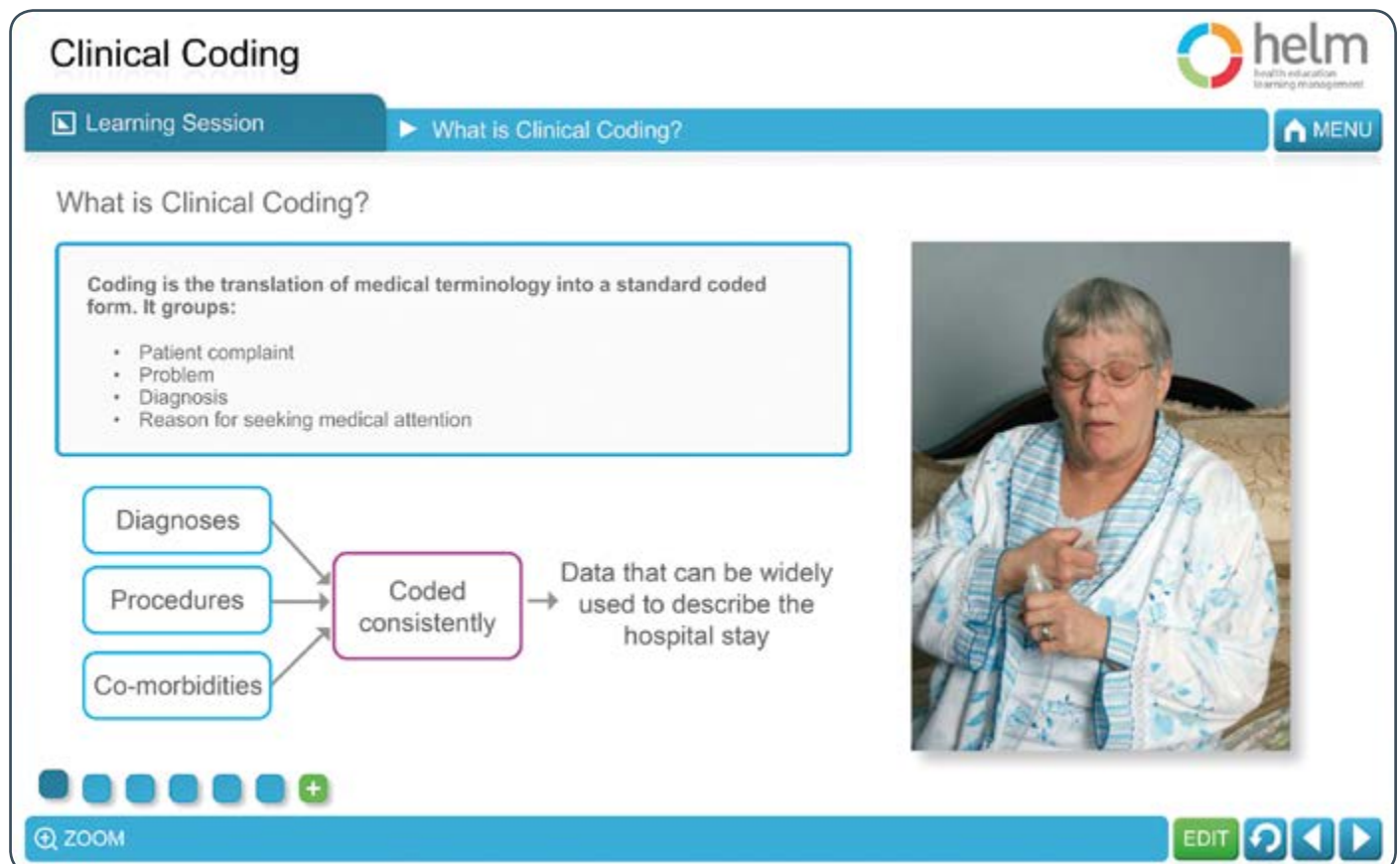
1800's: Data was required to count deaths from the plague and other maladies.

Today: We have standard methods for evaluating all clinical activities

Learning Objectives:

By the end of this module you should be able to:

- What Clinical Coding is.
- Why Clinical Coding is important to safe patient care.
- What information is required for good quality coding.
- What impact your own actions may have on the final quality of coded information.



The screenshot shows a HELM Learning Session interface. At the top, the title 'Clinical Coding' is displayed. Below it, a navigation bar includes 'Learning Session' and 'What is Clinical Coding?'. A 'MENU' button is also visible. The main content area is titled 'What is Clinical Coding?' and contains a text box defining coding as the translation of medical terminology into a standard coded form, listing groups: Patient complaint, Problem, Diagnosis, and Reason for seeking medical attention. Below this is a flowchart showing 'Diagnoses', 'Procedures', and 'Co-morbidities' leading to 'Coded consistently', which then leads to 'Data that can be widely used to describe the hospital stay'. A video player on the right shows a woman in a hospital gown. At the bottom, there are navigation controls including 'ZOOM', 'EDIT', and arrows.

Module Overview:

A successful Cost Improvement Plan, commonly known as a CIP is not just about saving money. The most successful organisations have developed long-term plans to transform clinical and non-clinical services that not only result in permanent cost savings, but also improve patient care, satisfaction and safety.


There are several factors which are common in organisations which perform well in CIP planning, delivery and sustainability. To explore these factors in the wheel diagram to the left (or wherever it will be on the page once these changes have been implemented).

Learning Objectives:


By the end of this module you should be able to:

- Define a CIP and explain its importance within organisations.
- Recognise when and why CIPs are implemented
- Distinguish between the different types of CIPs (Transformation, Tactical, Productivity, Pay, Non-Pay and Income).
- Identify the 6 key steps in establishing a CIP.
- Acknowledge common factors of success when developing a CIP, including using SMART objectives.
- Describe UHL's CIP guidelines.
- Understand the necessity for good project planning in CIPs delivery and use the RAG (Red Amber Green) Matrix.
- Consider evaluation methods to measure the success of the CIPs.

Cost Improvement Plan



Learning Session
Identifying CIP schemes
MENU



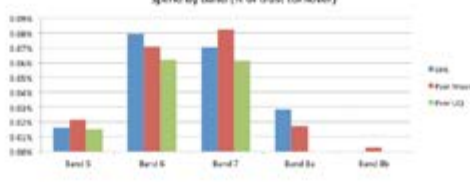
External benchmarking

Have a look at the graphs on this page. Reflect on what they are illustrating for UHL in comparison to a number of other peer Trusts for this particular service. **Click on each graph to enlarge**

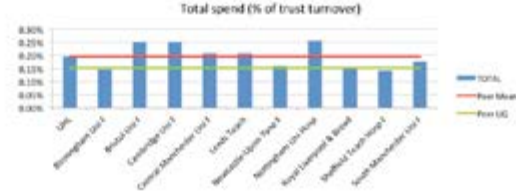
Enter your thoughts below

Please enter your answer here

Spend by band (% of trust turnover)



Total spend (% of trust turnover)



Top Tips
Agree with key stakeholders who will be the comparator group of Trusts. Discuss the analysis with the stakeholder and agree the opportunities.

Pitfalls
Important to understand differences in service in the Trusts that are selected as the comparator.

🔍 ZOOM

EDIT
↺
↻
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Module Overview:

The NHS is free at the point of care and the British public love it!

But...it does have a cost to all of us


This module explains how money moves from your pay packet to the treasury and back to your pay packet to pay for health care....or how money moves around the system to pay for our healthcare

Learning Objectives:

By the end of this module you should be able to:

- Understand the NHS structure and how funding flows around the NHS.
- Understand where the Trust gets it's funding from and how it is received.
- Understand what the Trust spends it's funding on.
- Understand what a budget is.
- Understand the full costs of treating our patients (patient level costing - PLICS).

Introduction to Finance



Learning Session
Introduction to Finance
MENU

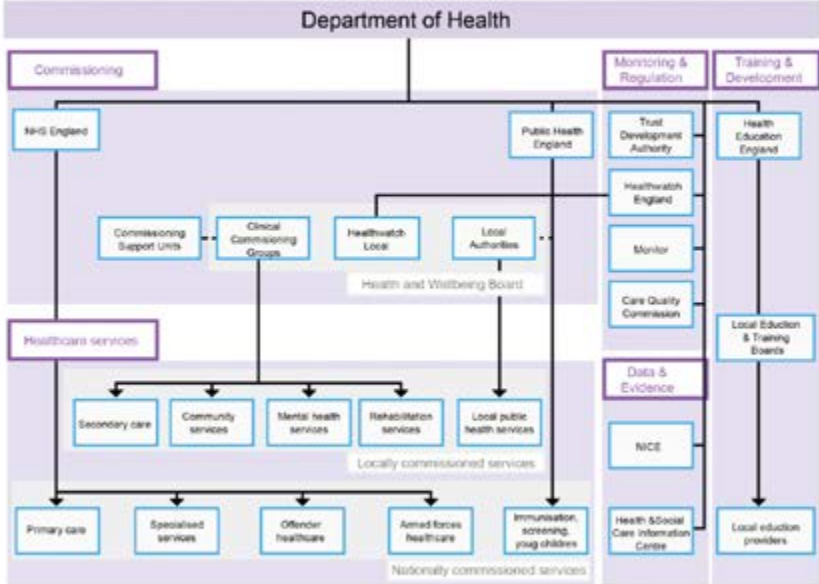
NHS structure

Structure of the NHS

The structure of the NHS is broadly split into four parts:

- **Commissioning** - bodies that buy services from providers on behalf of patients
- **Providers** - Deliver services direct to patients
- **Monitoring agencies, including the Trust Development Authority, Monitor and NHS England** - responsible for holding commissioners and providers to account, ensuring they deliver as per the requirements of their roles.
- **Training and Development** - responsible for education of clinical and non-clinical roles and development

Click on the diagram to view full screen



The diagram illustrates the Department of Health's structure. At the top is the Department of Health, which branches into three main areas: Commissioning, Monitoring & Regulation, and Training & Development. Commissioning includes NHS England, which oversees Commissioning Support Units, Clinical Commissioning Groups, Healthwatch Local, and Local Authorities. These groups are linked to a Health and Wellbeing Board. Below this are Healthcare services, divided into Locally commissioned services (Secondary care, Community services, Mental health services, Rehabilitation services, Local public health services) and Nationally commissioned services (Primary care, Specialist services, Offender healthcare, Armed forces healthcare, Immunisation, screening, young children). Monitoring & Regulation includes the Trust Development Authority, Healthwatch England, Monitor, Care Quality Commission, Data & Evidence, and NICE. Training & Development includes the Health Education England, Local Education & Training Boards, and Local education providers. The Health & Social Care Information Centre is also shown at the bottom right.

ZOOM
EDIT

Module Overview:

This module focuses on the general principles of appraisal, highlighting relevant aspects relating to how appraisal fits into improving patient care and supporting continuing professional development (CPD), as well as noting some of the specific tasks and activities relating to Appraisal the procedure for Non-Medical Staff . Appraisal provides a structured way to set expectations and give clarity of responsibilities in job role. Appraisal is in place to assess individual performance, provide feedback and define personal development to support delivery of expectations in job role.

The relationship between appraiser and appraisee provides a two way feedback mechanism; a way in which all staff are listened to, valued, motivated and supported at work.

Learning Objectives:

By the end of this module you should be able to:

- Explain the National drivers resulting in the changes.
- Underline the definition and meaning of performance appraisal.
- Highlight the benefits of Performance Appraisal.
- Elaborate on the objective and process of Performance Appraisal.
- Underline the Performance Appraisal system in the hospital.
- Explore strategies taken to deal with the different situations.



The screenshot shows a digital learning session titled "Performance Appraisal". At the top right is the "helm" logo. Below the title, there are navigation tabs for "Learning Session" and "Appraisal Theory", along with a "MENU" button. The main content area is titled "Definition and Meaning" and includes a quote from Newstrom: "It is the process of evaluating the performance of employees, sharing that information with them and searching for ways to improve their performance". Below this is a section titled "Meaning" which describes the appraisal process as supporting staff development and organisational effectiveness. To the right of the text is a list of performance levels with checkboxes: "AWESOME" (checked), "EXCEL...", "Very Good", "Satisfactory", "Marginal", and "Poor". A hand holding a pen is shown pointing at the "AWESOME" checkbox. At the bottom of the interface, there is a "ZOOM" button, a row of navigation icons, and an "EDIT" button.

Module Overview:

- Explain why it is important to buy in the right way
- Help and support you to buy in the right way

Learning Objectives:

By the end of this module you should be able to:

- How the Trust spends its money.
- Why it is important to get best value and the part we all play in this.
- How you can help us get best value for our patients.
- Everyone's role when buying goods and services.
- How you buy goods and services and comply with the Trusts policies and procedures.

Buying The Right Way



Learning Session ▶ How we spend our money MENU

How the trust spends its money

Approximately £43 in every £100 spent by the Trust goes on buying goods and services. The remainder is spend on pay for our staff. **43%**

£770m Is spent by the Trust each year

£330m Of this is spent on bought in goods and services (non pay)

With approximately **5,000** suppliers

By working together to buy the right way we can keep costs low and invest in our front line resources.

Getting value for money when we buy goods and services is therefore critical to making sure we are able to deliver caring at its best.

Our suppliers provide a whole range of critical goods and services which keep the hospital running and which have a major impact on delivering caring at its best.

better value and better care

ZOOM EDIT

Module Overview:

Your responsibility as a member staff, whoever you are, is to be clear about the basic rules that should be applied to patients on a referral to treatment pathway and, more specifically, what part you are required to play in the process.

If you want to know more or have any particular queries please contact your RTT Team who can be to provide any advice.

Learning Objectives:

By the end of this module you should be able to:

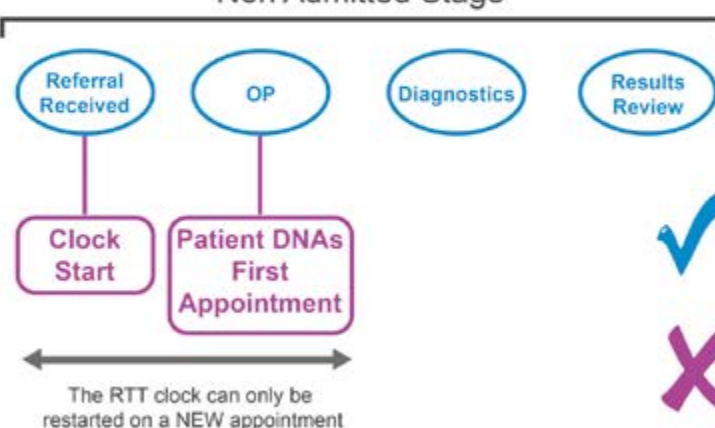
- What Referral to Treatment (RTT) is and why it is important for patients.
- What the national RTT standards for all NHS Trusts are.
- What starts and stops an RTT pathway.
- What the purpose of clinic outcome forms is and why they are so important.
- What happens when patients transfer between NHS Trusts, important definitions and how to manage cancellations, DNA's, patient unavailability and other scenarios.
- Where to find additional help and advice.

Referral to Treatment

Learning Session
Management of pathways
MENU

DNAs - Did Not Attend

Non Admitted Stage



The RTT clock can only be restarted on a NEW appointment

Patients who fail to attend for an appointment or admission should be discharged back to their GP

If a patient DNAs a NEW appointment, the pathway can be restarted from the date on which a new appointment is rebooked.

For DNA of a follow-up appointment, if the patient is discharged, the waiting time clock stops. If a further appointment is offered the RTT clock continues throughout

ZOOM
EDIT
Navigation icons

Module Overview:

Appraisal training generally covers the end of the process and focuses on the style of paperwork that needs to be completed. This gives the perception that it is a once a year process.

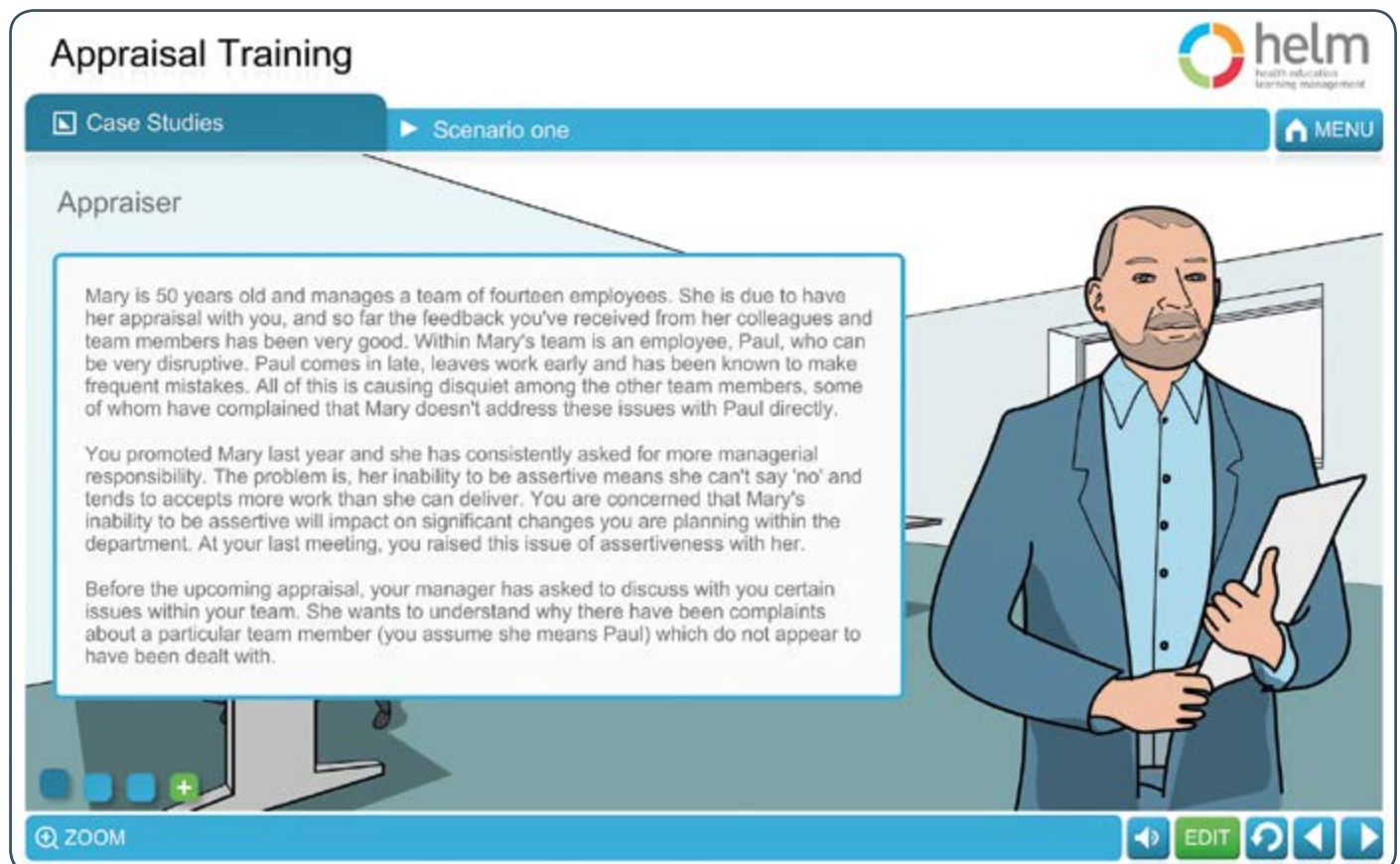
The paperwork serves an important purpose, to capture a meeting between you and the employee. However, an effective appraisal process is more than a yearly meeting and its aim is to achieve success for: you the manager (the appraiser), the employee (the appraisee), the organisation and its strategic/business plan, and the stakeholders.

We will cover the meaning and importance of an effective appraisal process, along with the benefits of regular touch points with employees throughout the year focusing on their objectives and development linked to the business and strategic plan. We will also cover the essential skills and approach of an appraisal process as an on-going cycle.

Learning Objectives:

By the end of this module you should be able to:

- Identify why appraisals are necessary for employees and the business.
- Succinctly justify the reason for appraisal to employees.
- Prepare employees for participation in appraisals.
- Identify the different skills required for effective appraisals.
- Describe how emotional states will affect appraisal meetings.
- Give effective feedback to employees.
- Identify the right environment for appraisal meetings.
- Know the importance of regular meetings (touch points with employees).
- Work through the scenarios and practice undertaking appraisals.



The screenshot shows a digital learning interface for 'Appraisal Training'. At the top, there is a navigation bar with 'Case Studies' and 'Scenario one' tabs, and a 'MENU' button. The main content area is titled 'Appraiser' and contains a text box with the following text:

Mary is 50 years old and manages a team of fourteen employees. She is due to have her appraisal with you, and so far the feedback you've received from her colleagues and team members has been very good. Within Mary's team is an employee, Paul, who can be very disruptive. Paul comes in late, leaves work early and has been known to make frequent mistakes. All of this is causing disquiet among the other team members, some of whom have complained that Mary doesn't address these issues with Paul directly.

You promoted Mary last year and she has consistently asked for more managerial responsibility. The problem is, her inability to be assertive means she can't say 'no' and tends to accept more work than she can deliver. You are concerned that Mary's inability to be assertive will impact on significant changes you are planning within the department. At your last meeting, you raised this issue of assertiveness with her.

Before the upcoming appraisal, your manager has asked to discuss with you certain issues within your team. She wants to understand why there have been complaints about a particular team member (you assume she means Paul) which do not appear to have been dealt with.

On the right side of the interface, there is an illustration of a man in a blue suit holding a folder. At the bottom of the interface, there is a 'ZOOM' button and a set of navigation controls including back, forward, and refresh buttons.

Module Title: National Early Warning Scorecard - Acute Care

Module Overview:

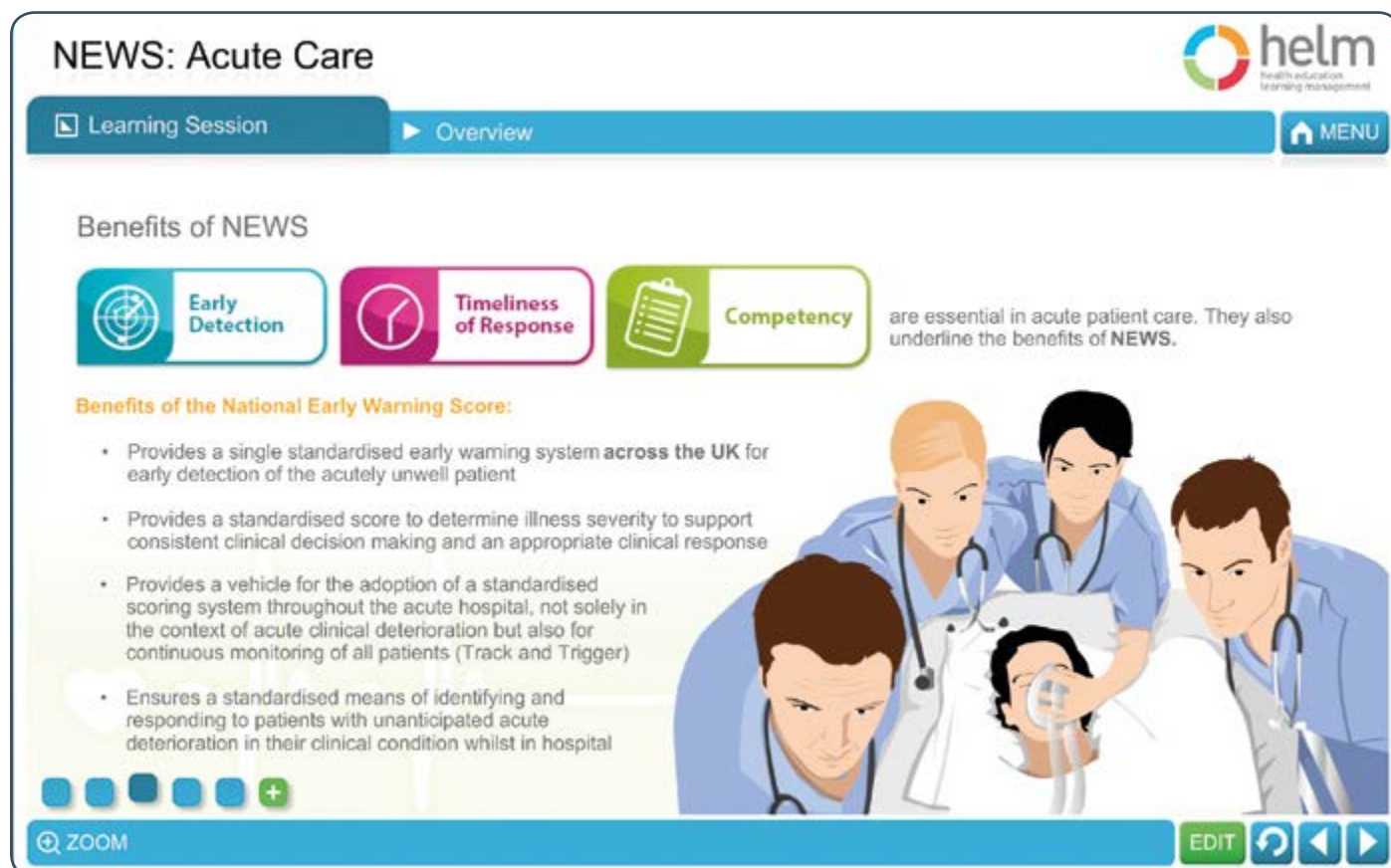
This e-learning session provides an overview of the National Early Warning Score (NEWS): The standardisation of assessment of acute illness severity.

NEWS provides a systematic method to measure simple physiological parameters in all patients aged 16 and above.

Learning Objectives:

By the end of this module you should:

- Describe the benefits of the National Early Warning Score (NEWS)
- List two main ways in which NEWS is to be used
- Know the Six Physiological Parameters included in the NEWS
- Outline how the NEWS works
- Describe the NEWS system, threshold and triggers
- Demonstrate correct use of the NEWS and its clinical response



The screenshot shows the 'NEWS: Acute Care' e-learning module interface. At the top right is the 'helm' logo. Below it is a navigation bar with 'Learning Session' and 'Overview' tabs, and a 'MENU' button. The main content area is titled 'Benefits of NEWS' and features three icons: 'Early Detection' (globe), 'Timeliness of Response' (clock), and 'Competency' (clipboard). To the right of these icons is the text: 'are essential in acute patient care. They also underline the benefits of NEWS.' Below this is a section titled 'Benefits of the National Early Warning Score:' followed by a bulleted list of four points. To the right of the list is an illustration of three healthcare professionals (two men and one woman) in blue scrubs examining a patient lying on a stretcher. At the bottom left of the interface are five small blue circles and a plus sign. At the bottom right are 'ZOOM', 'EDIT', and navigation arrows.

NEWS: Acute Care

Learning Session Overview MENU

Benefits of NEWS

Early Detection Timeliness of Response Competency

are essential in acute patient care. They also underline the benefits of NEWS.

Benefits of the National Early Warning Score:

- Provides a single standardised early warning system **across the UK** for early detection of the acutely unwell patient
- Provides a standardised score to determine illness severity to support consistent clinical decision making and an appropriate clinical response
- Provides a vehicle for the adoption of a standardised scoring system throughout the acute hospital, not solely in the context of acute clinical deterioration but also for continuous monitoring of all patients (Track and Trigger)
- Ensures a standardised means of identifying and responding to patients with unanticipated acute deterioration in their clinical condition whilst in hospital

ZOOM EDIT

Module Title: National Early Warning Scorecard - Ambulance Care

Module Overview:

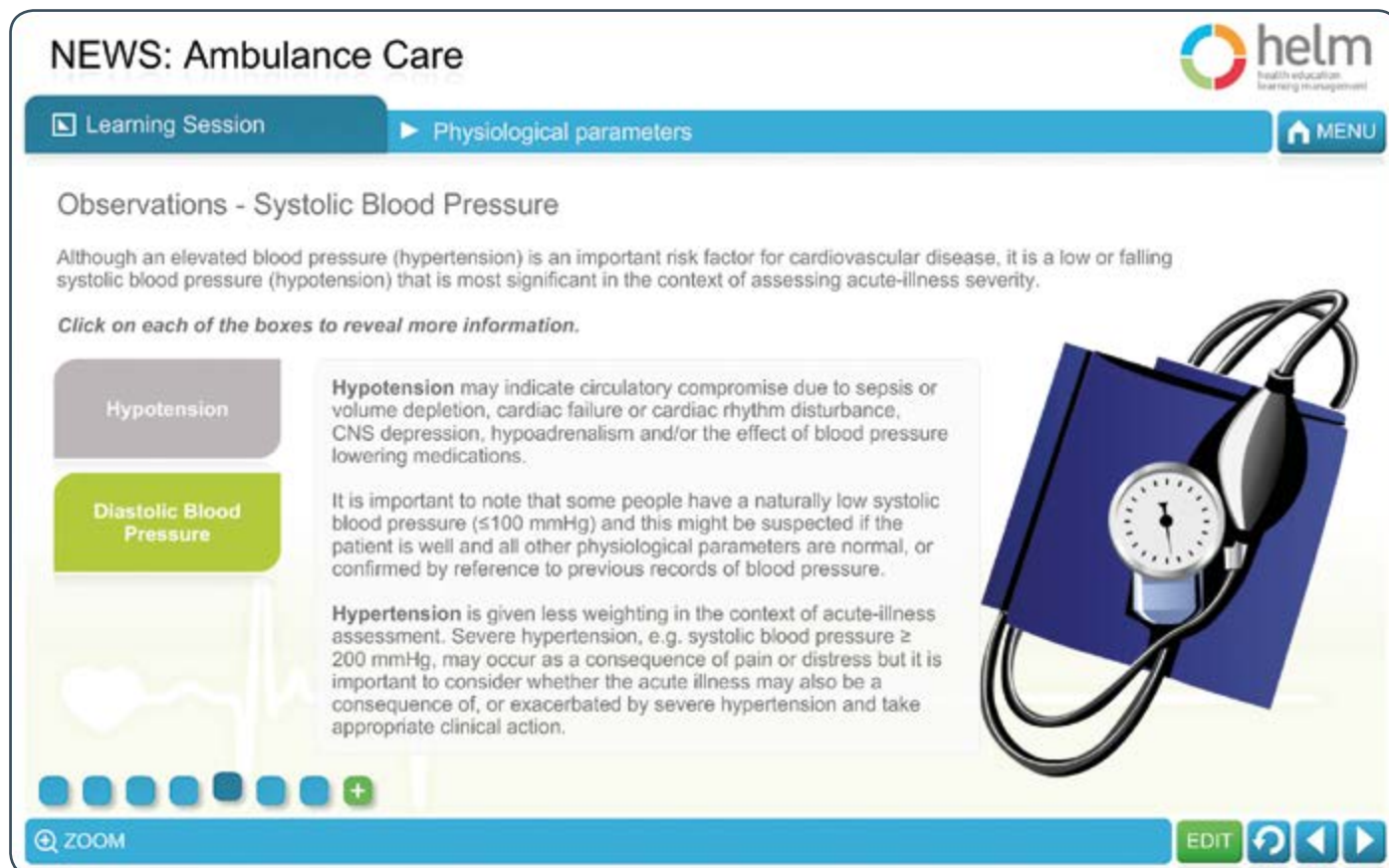
This e-learning session provides an overview of the National Early Warning Score (NEWS): The standardisation of assessment of acute illness severity.

NEWS provides a systematic method to measure simple physiological parameters in all patients aged 16 and above.

Learning Objectives:

By the end of this module you should be able to:

- Describe the benefits of the National Early Warning Score (NEWS).
- List two main ways in which NEWS is to be used
- Know the Six Physiological Parameters included in the NEWS.
- Outline how the NEWS works.
- Describe the NEWS system, threshold and triggers.
- Demonstrate correct use of the NEWS and its clinical response.



The screenshot shows the 'NEWS: Ambulance Care' e-learning module interface. At the top right is the 'helm' logo. Below it is a navigation bar with 'Learning Session' and 'Physiological parameters' tabs, and a 'MENU' button. The main content area is titled 'Observations - Systolic Blood Pressure'. It contains a paragraph about hypertension and hypotension, followed by a list of interactive boxes: 'Hypotension' (grey), 'Diastolic Blood Pressure' (green), and 'Hypertension' (white). Each box has associated text explaining its clinical significance. To the right is an illustration of a blood pressure cuff. At the bottom, there is a 'ZOOM' button, a 'ZOOM' icon, an 'EDIT' button, and navigation arrows.

NEWS: Ambulance Care

helm
health education
learning management

Learning Session | Physiological parameters | MENU

Observations - Systolic Blood Pressure

Although an elevated blood pressure (hypertension) is an important risk factor for cardiovascular disease, it is a low or falling systolic blood pressure (hypotension) that is most significant in the context of assessing acute-illness severity.

Click on each of the boxes to reveal more information.

Hypotension

Diastolic Blood Pressure

Hypertension

Hypotension may indicate circulatory compromise due to sepsis or volume depletion, cardiac failure or cardiac rhythm disturbance, CNS depression, hypoadrenalism and/or the effect of blood pressure lowering medications.

It is important to note that some people have a naturally low systolic blood pressure (≤ 100 mmHg) and this might be suspected if the patient is well and all other physiological parameters are normal, or confirmed by reference to previous records of blood pressure.

Hypertension is given less weighting in the context of acute-illness assessment. Severe hypertension, e.g. systolic blood pressure ≥ 200 mmHg, may occur as a consequence of pain or distress but it is important to consider whether the acute illness may also be a consequence of, or exacerbated by severe hypertension and take appropriate clinical action.

ZOOM | EDIT | Navigation arrows

Module Title: National Early Warning Scorecard - Mental Health

Module Overview:

This e-learning session provides an overview of the National Early Warning Score (NEWS): The standardisation of assessment of acute illness severity.

NEWS provides a systematic method to measure simple physiological parameters in all patients aged 16 and above.

Learning Objectives:

By the end of this module you should:

- Describe the benefits of the National Early Warning Score (NEWS).
- List two main ways in which NEWS is to be used.
- Know the Six Physiological Parameters included in the NEWS.
- Outline how the NEWS works.
- Describe the NEWS system, threshold and triggers.
- Demonstrate correct use of the NEWS and its clinical response.

NEWS: Mental Health



Learning Session ▶ Calculating a Score/Recording observations MENU

Supplemental oxygen

Patients requiring supplemental oxygen are at greater clinical risk. Thus, the requirement for supplemental oxygen to maintain satisfactory oxygen saturations has been incorporated into the scoring system.

The NEWSDIG recommended that a **weighting score of 2** should be added to the aggregate NEWS score for any patient requiring supplemental oxygen.

"Note that 'supplemental oxygen' here refers to routine oxygen delivery by mask or nasal cannulae. When supplemental oxygen is required to maintain oxygen saturations, it should be formally prescribed and the target oxygen saturations defined for individual patients admitted to hospital as per the British Thoracic Society's recommendations."



ZOOM EDIT

Module Title: National Early Warning Scorecard - Community/Nursing or Residential Home

Module Overview:

This e-learning session provides an overview of the National Early Warning Score (NEWS): The standardisation of assessment of acute illness severity.

NEWS provides a systematic method to measure simple physiological parameters in all patients aged 16 and above.

Learning Objectives:

By the end of this module you should be able to:

- List two main ways in which NEWS is to be used.
- Know the Six Physiological Parameters included in the NEWS.
- Outline how the NEWS works.
- Describe the NEWS system, threshold and triggers.
- Demonstrate correct use of the NEWS and its clinical response.

NEWS: Community/Nursing or Residential Home

Module Title: National Early Warning Scorecard - Primary Care

Module Overview:

This e-learning session provides an overview of the National Early Warning Score (NEWS): The standardisation of assessment of acute illness severity.


NEWS provides a systematic method to measure simple physiological parameters in all patients aged 16 and above.

Learning Objectives:

By the end of this module you should be able to:

- List two main ways in which NEWS is to be used
- Know the Six Physiological Parameters included in the NEWS
- Outline how the NEWS works
- Describe the NEWS system, threshold and triggers
- Demonstrate correct use of the NEWS and its clinical response

NEWS: Primary Care



Learning Session ▶ Triggers and thresholds MENU

Defining Local Responses

It is recommend that locally, the agreed response to each NEWS trigger level should define;


- the speed/urgency of response - to include an escalation process to ensure that a response always occurs
- who responds, i.e. the seniority and clinical competencies of the responder/s
- the appropriate clinical setting for ongoing clinical care
- the frequency of subsequent monitoring of the patient.

There will be circumstances when a health or social care professional may judge that the NEWS for a patient underestimates their concern for the patient's clinical condition.

In such circumstances, care must be escalated to a more senior clinical decision maker.

It is recommended that reasons not to act on the NEWS should be recorded in the clinical notes.

When clinical teams decide that the routine recording of data for NEWS is not appropriate, e.g. patients on an end life care pathway, such decisions should be discussed with the patient and recorded in the notes.



Zoom EDIT

Module Overview:


This innovative elearning module has been developed for registered nurses who are new to the renal speciality. It is also useful for allied health professionals who are new to kidney care. The module provides you with everything you need to prepare you for your first months on a renal ward, dialysis unit or clinic. Module topics include anatomy and physiology of the kidney, prevention of kidney disease, caring for the acutely ill and an overview of renal replacement therapy. In addition, specialist clinical skills such as assessment and education of people with kidney disease are presented and discussed. The module is interspersed with interactive activities that you can discuss with your senior colleagues and/or mentors. The module will take approximately 10 hours to complete, but you have the flexibility to undertake the module when you wish, in either short or long chunks of time.

Learning Objectives:

On completion of this module you will know and understand:

- Anatomy and Physiology of the kidney.
- Epidemiology and causes of kidney disease.
- International staging of kidney disease.
- Prevention of kidney disease.
- Signs and symptoms of kidney disease.
- Infection control.
- Patient assessment.
- Patient education.
- Psycho-social care including discharge planning.
- Medicine management.
- Basic nutrition in kidney disease.
- Caring for the acutely ill with renal disease.
- Basic introduction to renal replacement therapy (RRT).

Foundation Module in Kidney Care




📄 Learning Topics
▶ Anatomy and physiology
🏠 MENU

Functions of the kidney

The kidneys have four major functions. When kidney function starts to deteriorate many patients have no symptoms at all, so many do not know anything is wrong and so do not seek medical or nursing help. Some people may experience signs and symptoms once the kidney function reaches stage 3b or stage 4 (see Stages of CKD in the following section) and these are often related to the following four main functions of the kidney.

1. Filtration of waste products from the blood
2. Water and electrolyte balance
3. Control of blood pressure
4. Hormonal functions e.g. production of erythropoietin, metabolism of Vitamin D

In the following pages, these functions will be explored in more detail. As you read the information, consider how each of these functions might relate to the signs and symptoms experienced by the patients in the case studies.



🔍 ZOOM

EDIT
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▶

HEALTHCARE GENERAL

Module Title: Fluid Management in Kidney Disease (Advanced)

Module Overview:

This e-learning module has been developed by the British Renal Society Education Committee in conjunction with expert clinicians from across the multi-professional team, who volunteered to write the content.

The team who authored this module are:


- Jane Alderdice, Dietetic Professional Lead/Renal Dietetic Team Leader, Central Manchester University Hospitals NHS Foundation Trust.
- Maria Barrett, Renal Dietitian, Birmingham Heartlands Hospital.
- Christopher Duncan, Senior Lecturer, University of Wolverhampton.
- Dr Emma Montgomery, Nephrology Specialist Registrar in Nephrology and General Internal Medicine, Newcastle upon Tyne.
- Dr Nicola Thomas, Associate Professor in Kidney Care, London South Bank University.
- Sue Woodcock, Senior Lecturer, Kingston University and St George's, University of London.
- Dr Elizabeth Lindley, Clinical Scientist, Leeds Teaching Hospitals NHS Trust, has kindly provided advice and resources for the Bioimpedance section.

Learning Objectives:

By the end of this module you should be able to:

- Review how to undertake detailed fluid assessment and other measures such as bioimpedance.
- Manage complexities in fluid balance on HD and PD, specifically those relating to prescription management.
- Explore innovative ways to improve patient outcomes.

Fluid Management in Kidney Disease



📄 Advanced Section
▶ Case Study 2: Managing fluid balance in HD
🏠 MENU


Introduction

Mrs Adeyemi has been on haemodialysis for 4 months. When she first commenced haemodialysis, she was nauseous, struggling to eat sufficiently and had been losing weight. Mrs Adeyemi is now eating better and achieving good urea reduction ratios (URRs). Her dry weight has not been altered for the past 2 months.

If you are not familiar with the term URR, please read this paper:

<http://www.niddk.nih.gov/health-information/health-topics/kidney-disease/hemodialysis-dose-and-adequacy/Pages/facts.aspx>

Currently Mrs Adeyemi has recently been typically presenting with apparent high fluid gains, suffering dizzy spells on dialysis and usually has a low systolic blood pressure. Mrs Adeyemi is essentially anuric. Her biochemical parameters are normal.



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Module Title: Pacemakers and ICDs for Paramedics and Nurses

Module Overview:

This course is designed to develop essential knowledge and skills in the assessment and treatment of patients with cardiac pacemakers or ICDs.


Firstly we will review basic cardiac electrophysiology, looking at how the cardiac cycle works and the role of the sinus and AV node. We will also review how the cardiac conduction system works, and the problems that can occur with its normal activity.

Learning Objectives:

By the end of this module you should know:

- History of Pacing.
- Pacemaker Components.
- Pacemaker Terminology (including the pacemaker code).
- Single and Dual Chamber Pacing.
- ECGs in Cardiac Pacing.
- Pacemaker Magnet Mode.
- Pacemaker Indications.
- Pacemaker Complications.
- First Line Treatment of Pacemaker Complications.
- Introduction to ICDs.
- ICD Components.
- ICD Terminology (including the pacemaker code).
- ICD Magnet Mode.
- ICD Indications.
- ICD Complications.
- First Line Treatment of ICD Complications.
- ICDs in End of Life Care.

Pacemakers and ICDs for Paramedics and Nurses



ICDs

ICDs and Common Problems

MENU


ICD Circuitry

The ICD circuitry determines the function of the ICD can (i.e. shocks for tachyarrhythmia or pacing for bradyarrhythmia).

It has the ability to sense the intrinsic electrical signals of the heart (or absence of). There is a "Tachy" element of the device that senses for tachyarrhythmia and a "Brady" element of the device that senses for bradyarrhythmia.

This circuitry can be vulnerable to interference (AC, Magnetic, Radiofrequency), although modern devices have shielding and smart filters to reduce risk.

They can also be sensitive to magnetic fields including those found in MRI scanners although newer devices CE marked as MRI safe.



Battery

Circuitry

ZOOM

EDIT

HYDRATION

Module Title: Water and Hydration

Module Overview:

This module on Water and Hydration introduces the physiology of water in the body. We will look at how best to stay optimally hydrated, and how inadequate hydration can impact on health - both in clinical environments and everyday life.

Water is essential for life. It is:

- The environment in which the body's biochemical reactions take place.
- The medium in which nutrients, oxygen, waste products and heat are transported.

Too much or too little water upsets these functions, and can impair health, performance and recovery (from sport or illness) in us all.

From athletes and the aged, to the professional and post-operative, correct hydration can be a matter of 'personal best' or 'life or death'.


Learning Objectives:

By the end of this module you should:

- Explain where water is found in the body and how it circulates.
- Recognise the impact that changes to hydration levels can have on the body's physiology.
- Identify how the mechanisms governing intake and output of fluids keep us optimally hydrated.
- Recognise the signs and symptoms of dehydration and overhydration.
- Evaluate hydration status and take appropriate steps to redress any imbalance.

This module will give you a basis from which to move on to our other modules, exploring more specialised areas of hydration.

Water and Hydration



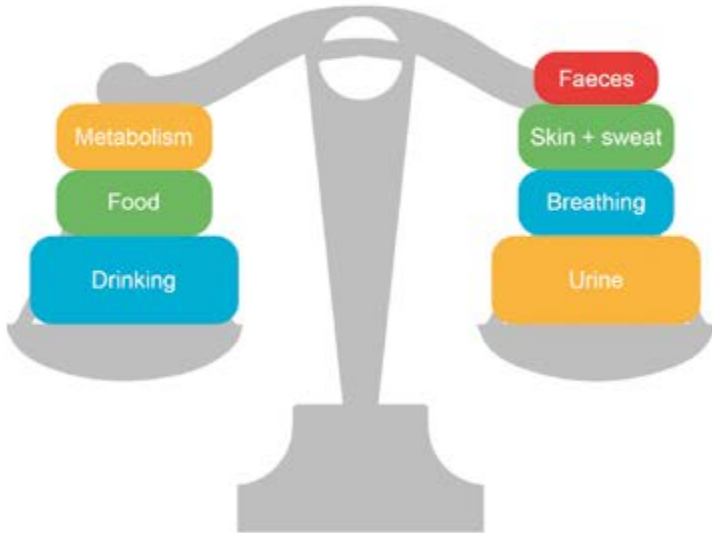
Learning Session ▶ The ins and outs of water MENU

The right balance

For optimal health and performance, the amount of water in your body needs to be at the 'Goldilocks point': not too much, not too little, but just right.

Your body continuously adjusts fluid intake and output to achieve this balance.

In this section, we'll look at these inputs and outputs, and how they are regulated.



GLOSSARY ZOOM EDIT ↶ ↷

HYDRATION

Module Title: Hydration in Care Homes

Module Overview:

This module on hydration in care homes will help you keep care home residents appropriately hydrated.

Dehydration is a common problem for older people. A quarter of all nursing home patients admitted to hospital are dehydrated.

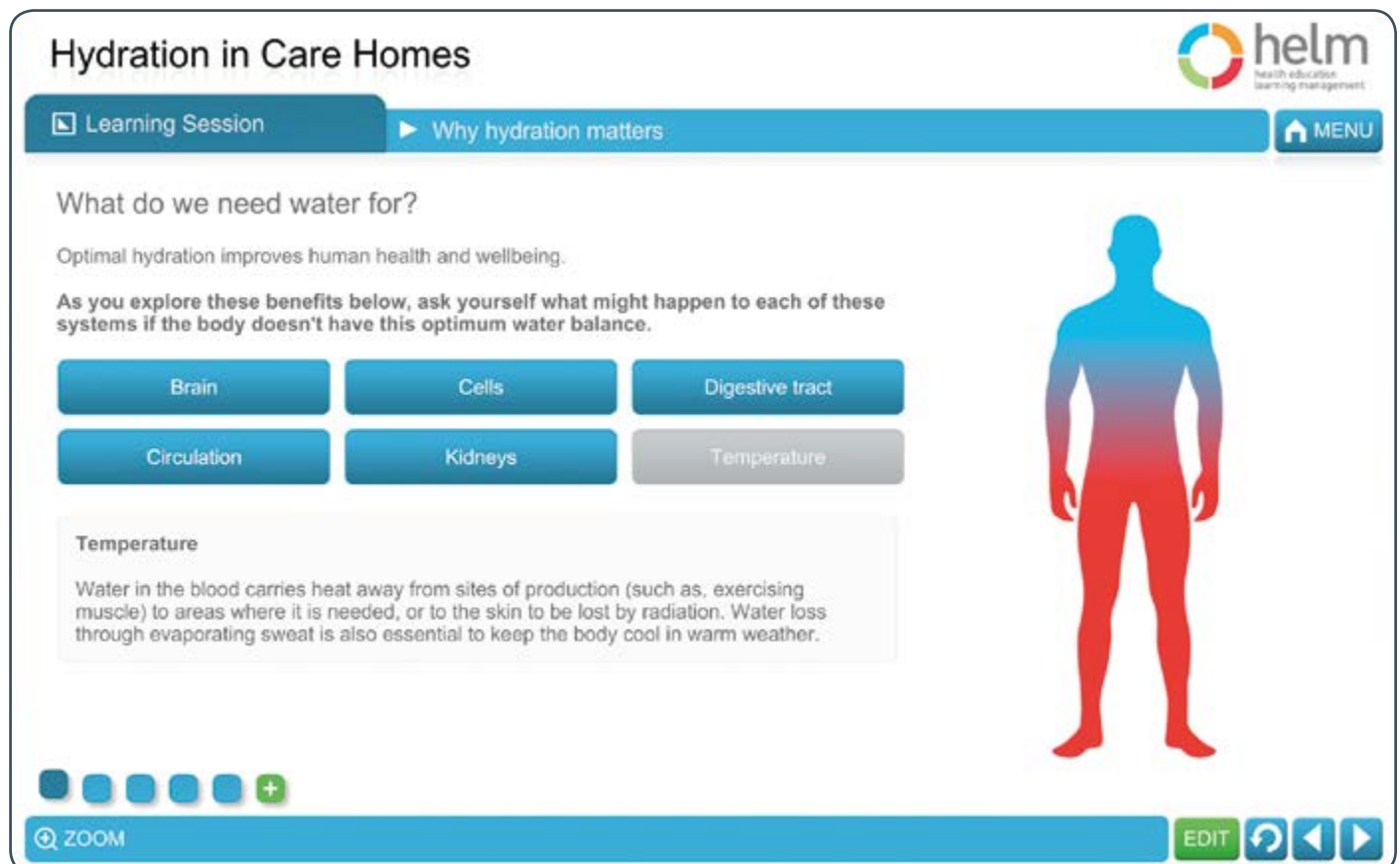
Older people are at greater risk of becoming dehydrated. This can affect their health and quality of life.

As a carer, you can play a vital role in preventing dehydration in care home residents.

Learning Objectives:

By the end of this module you should be able to:

- Recognise the impact of poor hydration on older people.
- Identify individuals at risk of poor hydration.
- Evaluate and respond to indicators of poor hydration.
- Define and develop good hydration practice within a care home.



The screenshot shows the 'Hydration in Care Homes' learning module interface. At the top, the title 'Hydration in Care Homes' is displayed on the left, and the 'helm' logo is on the right. Below the title, there are two tabs: 'Learning Session' (selected) and 'Why hydration matters'. A 'MENU' button is located in the top right corner. The main content area starts with the question 'What do we need water for?' followed by the text 'Optimal hydration improves human health and wellbeing.' Below this, a prompt asks the user to consider what might happen to various body systems if water balance is not optimal. There are six buttons representing these systems: 'Brain', 'Cells', 'Digestive tract', 'Circulation', 'Kidneys', and 'Temperature'. The 'Temperature' button is currently selected, and a text box below it explains that water in the blood carries heat away from sites of production (like exercising muscle) to areas where it is needed, or to the skin to be lost by radiation. Water loss through evaporating sweat is also essential to keep the body cool in warm weather. To the right of the text is a silhouette of a human figure with a color gradient from blue at the top to red at the bottom. At the bottom of the interface, there are navigation controls including a 'ZOOM' button, an 'EDIT' button, and several arrow buttons.

Module Overview:

This module on **perioperative hydration** will help you manage patients' fluid needs around the time of surgery. The hydration status of patients before, during and after surgery can have a significant impact on postoperative complications, length of stay in hospital, and even survival.

Problems occur when patients receive too much (overhydration) OR too little (underhydration) fluid. In fact, the risk of death is almost four times higher for patients who had poor fluid management prior to surgery compared with patients whose fluid therapy was adequate.*

The NCEPOD report highlights the importance of good fluid management throughout the preoperative period. Throughout a patient's hospital care there will be many healthcare professionals involved in the care. Everyone is responsible for assessing and managing a patient's fluid status.

As such, there is a need for greater awareness of best practice in fluid management requirements of surgical patients among hospital staff at all levels.

* 'Knowing the risk' NCEPOD report 2011 - see the 'Further support and information' page at the end of this module


Learning Objectives:

By the end of this module you should be able to:


- Understand the benefits of maintaining optimal hydration, and the harmful effects of not doing so.
- Learn how to balance oral fluid intake and intravenous fluid requirements in surgical patients.
- Learn to identify features of overhydration and underhydration in your surgical patients.
- Learn to manage basic fluid requirements in the perioperative period.
- Evaluate and respond to patients' fluid requirements following surgery.

Before you start this specialised area of hydration, you may want to undertake our introductory module on water and hydration, which offers an overview of fluid balance and distribution.

Perioperative Hydration




Learning Session ▶ Preoperative hydration MENU

 **Preparing patients for their operation**
Imagine you are looking after a patient who will be having elective surgery next week.
You need to give them advice about when to stop eating and drinking before their operation.

What does 'clear fluid' mean?
What does 'solid food' mean?
Note down your ideas here, then Confirm to read more.

Please enter your answer here:



ZOOM EDIT ↶ ↷

Module Overview:

Water is an essential ingredient of life, and is:

- The environment in which the body's biochemical reactions take place.
- The medium in which oxygen, nutrients, waste products and heat are transported.

Dehydration can thus worsen physical performance (especially endurance) and recovery following sport. But overhydration can be dangerous.

Physical activity can cause dehydration:

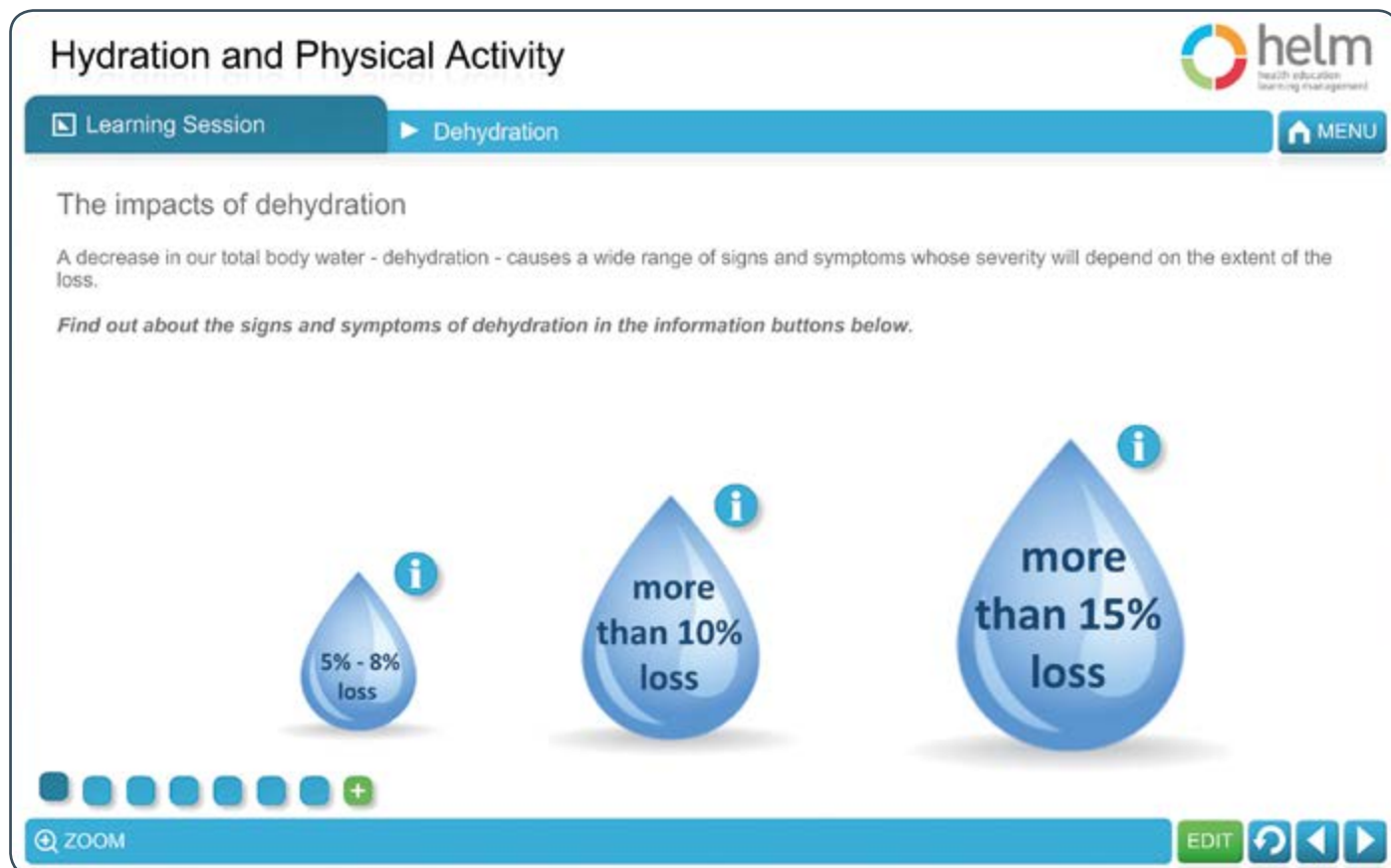
- Fluid intake can fall, as drinking can be hard whilst exercising.
- Fluid losses (through sweat and in the breath) can rise.

Understanding your individual hydration needs and creating a personalised drinking plan can help you achieve better results, stay comfortable during exercise, and recover effectively from training or competition.

Learning Objectives:

By the end of this module you should be able to:

- Understand why water is important to exercise and recovery.
- Appreciate how optimal hydration can be beneficial in sport and physical activity.
- Recognise the factors that can adversely affect hydration.
- Evaluate your own hydration status.
- Devise a hydration plan for your sport or activities.



The screenshot shows a digital learning interface. At the top, the title 'Hydration and Physical Activity' is displayed next to the HELM logo. Below the title, there are navigation tabs for 'Learning Session' and 'Dehydration', along with a 'MENU' button. The main content area is titled 'The impacts of dehydration' and contains a paragraph explaining that dehydration causes various signs and symptoms depending on the extent of water loss. It instructs the user to click on information buttons (represented by 'i' icons) for more details. Three blue water droplets of increasing size illustrate the levels of dehydration: '5% - 8% loss', 'more than 10% loss', and 'more than 15% loss'. At the bottom of the interface, there is a 'ZOOM' control, an 'EDIT' button, and navigation arrows.

Module Overview:


In this module, we will define an Adverse Drug Reaction (ADR) and discuss the identification and prediction of ADRs in patients. We will explain the importance of reporting ADRs to the Yellow Card Scheme and describe pharmacovigilance systems in the UK.

Learning Objectives:

By the end of this module you should:

- Define an ADR and say how ADRs are classified.
- Identify susceptibility factors that place patients at increased risk of ADRs.
- Discuss the concept of pharmacovigilance and its importance for public health.
- Explain the role and function of the Yellow Card scheme.
- Name sources of information on ADRs.

Adverse Drug Reactions



Session 1 ▶ Definitions and Classifications MENU

DoTS - Dose

In 2003, Aronson and Ferner introduced a new system of classification, as some reactions did not fit into the old system.

This new system was called **DoTS** and looks at ADRs according to:

- Dose
- Timing
- Susceptibility

All drug effects, both beneficial and adverse, depend on dose.

ADRs can therefore be divided into three types according to the **doses** at which they occur (see Figure 1):

- **Hypersusceptibility reactions:** occur at doses much lower than therapeutic—*anaphylaxis with penicillin.*
- **Collateral effects:** occur at therapeutic doses—*nausea with morphine.*
- **Toxic effects:** occur at doses higher than those used therapeutically—*liver failure with paracetamol.*

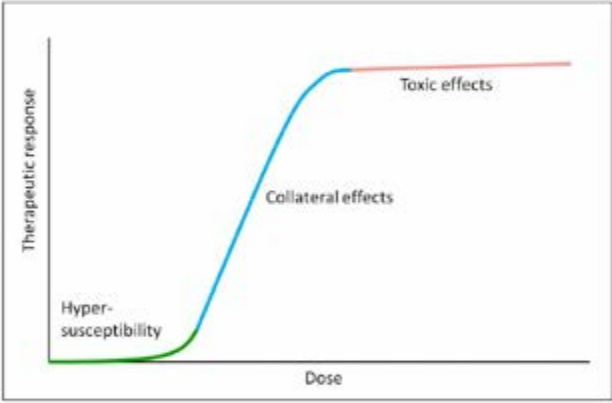


Figure 1: A Log dose-response curve to show the relationship between dose and type of ADR.

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Module Overview:

In this module we will discuss the potential risks and possible harms caused by drug-drug and drug-food interactions.

We will describe the different types of interactions that can occur, the mechanisms by which they occur and the potential clinical implications.


Knowledge of the mechanisms of interactions, supported with information from reputable resources, can help reduce the opportunity of occurrence and reduce the risk of patient harm.

Learning Objectives:

By the end of this module you should be able to:

- Define pharmacodynamic and pharmacokinetic mechanisms of drug interactions.
- List the patient factors that may increase the risk of a drug interaction occurring.
- Describe some common drug interactions in clinical practice and strategies for minimising their risk of occurrence.
- Access reputable information on the risk of a drug interactions occurring and the potential effects.
- Report all suspected drug interactions for new medicines (black triangle drugs) and serious reactions for all medicines to the Medicines and Healthcare Products Regulatory Agency (MHRA) Yellow Card Scheme.
- Devise a hydration plan for your sport or activities.

Drug Interactions




Session 1 ▶ Background MENU

Definition and Incidence

In the UK, up to 1 in 20 admissions to hospital are associated with Adverse Drug Reactions (ADRs) and nearly 1 in 5 of these is associated with a drug interaction.

When the effects of a drug are changed by the presence of another drug, this is defined as a **drug-drug interaction**. Interactions can lead to reduced efficacy or an enhanced effect of the drug resulting in toxicity. Interactions may also occur when herbal medicines, nutritional supplements, diet, or where environmental agents interfere with a drug's effects.

The age and disease status of a patient may increase or even reduce the effects of drugs and interactions. However, it is worth remembering that not all patients will be susceptible to a particular drug interaction. Studies looking at 'potential' drug-interactions within patients show a higher incidence, compared to those that examine actual, real-world drug interactions. For example, a study examining drugs co-prescribed for patient's on warfarin found that 80% of patients were taking potentially interacting drugs, a figure that is unlikely to reflect the reality in practice.



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ZOOM EDIT

Module Overview:

In this module we will discuss the use of medicines in special patient groups, including those with kidney and liver dysfunction, older adults and during pregnancy and breastfeeding.


We hope that this module provides you with the knowledge required to appreciate why regimens are adapted in special patient groups, and why monitoring requirements may need to be adjusted.

Learning Objectives:

By the end of this module you should be able to:

- Discuss how impaired kidney and liver function can alter the way the body handles medicines (i.e. the pharmacokinetics of the medicine).
- List some common medicines that are toxic to the kidney and liver.
- Identify common medicines that need dose adjustment or increased monitoring in kidney and liver dysfunction.
- Describe the physiological changes that occur with age and how this can alter the way in which the body handles medicines.
- Describe how drug exposure to the fetus can be minimised to reduce the risk of harm during pregnancy.
- Describe the factors that should be considered when administering medicines to a breastfeeding mother.
- Know where to find reputable, reliable and up-to-date information.

Special Patient Groups



Session 1 ▶ Liver Dysfunction MENU

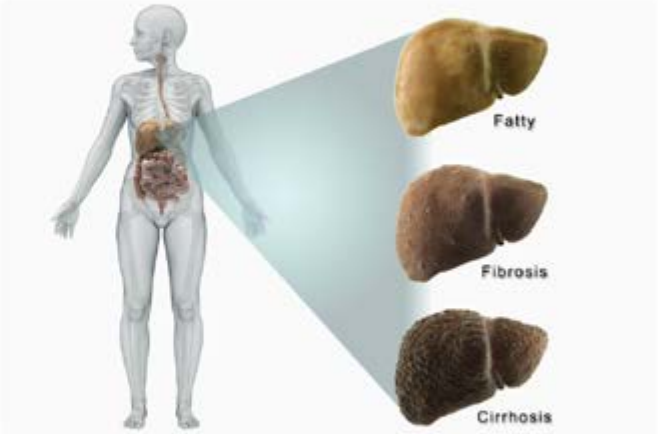
Introduction

Patients with liver disease are becoming more common; it is the only cause of death that is still increasing year-on-year.

The majority of medicines are metabolised by the body, the main site being the liver, to enable excretion.

Many medicines can cause damage to the liver. Drug-induced liver injury is common and some studies have implicated medicines in 5% of hospital admissions with jaundice. The majority of these reactions are idiosyncratic (i.e. unique to an individual) and cannot be predicted. However, there are a number of medicines that are known to damage the liver, leading to both acute and chronic liver injury, some with dose-dependent effects.

Many medicines can induce or inhibit liver enzymes, which can affect the metabolism of other medicines.



Fatty
Fibrosis
Cirrhosis

ZOOM EDIT

Module Overview:


In this module we will take you step-by-step through the process of performing various dose calculations and associated conversions. We will provide examples and then test your knowledge throughout using in-module activities. We will highlight some of the common pitfalls when calculating doses and explain how you can avoid them. Finally we will direct you to some resources for further reading and practice.

Learning Objectives:

By the end of this module you should:

- List some common calculation errors and how these may occur.
- Describe the standards in place to reduce the risk of medication errors as a result of calculation errors.
- Access and use appropriate resources to assist your calculations.
- Convert units and measures.
- Discuss the various terms used to define a patient's weight, and calculate doses based on these parameters.
- Calculate doses to be administered for enteral and parenteral medicines.
- Calculate a percentage change in dose.

Dose Calculations



Session 1
Standards
MENU

Documenting Weight

There are risks associated with failing to ascertain and monitor accurate weights of children and adults in healthcare. Incidents have been reported to the National Reporting and Learning Service (NRLS) where patients were not weighed, had inaccurate weights recorded (sometimes because estimates were used), or whose weight was not monitored over a period of time. Such errors have resulted in issues such as undetected or poorly managed malnutrition and incorrect doses of medicines.

The dosing regimen for some drugs is dependent on the weight of the patient (e.g. gentamicin). Therefore every patient should have a 'recent' weight documented in their medical record (and on the inpatient chart in the hospital setting).

You may come across a few terms to describe a patient's weight, for example:

Actual body weight


Ideal body weight

Lean body weight

- Lean body weight is calculated by subtracting body fat weight from actual body weight.

For pregnant patients, you may also see the term 'early pregnancy body-weight'. This relates to the patient's weight in their first trimester.

When calculating drug doses, the product literature will guide you to the most appropriate weight to use. For patients at the extremes of the weight range it is advisable to seek further information on appropriate



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Module Overview:


In this module, we will discuss how evidence-based medicine should be used to help inform your approach to clinical practice. We will describe how this can improve patient and healthcare outcomes, reduce variations in care, and ensure NHS resources are managed effectively.

Learning Objectives:

By the end of this module you should be able to:

- Describe the principles of Evidence-Based Practice (EBP).
- Describe how EBP is crucial in the development of healthcare policies, protocols and formularies.
- Know where to access reputable, reliable and up-to-date information.
- Analyse and appraise evidence.
- Describe the role of Area Prescribing Committees (APC) and the National Institute for Health and Care Excellence (NICE).
- Describe the role of the UK Medicines Information Service (UKMi) and how it can support healthcare professionals (and patients) with queries about medicines.
- Describe the role of clinical audit and the stages involved.

Evidence-Based Practice



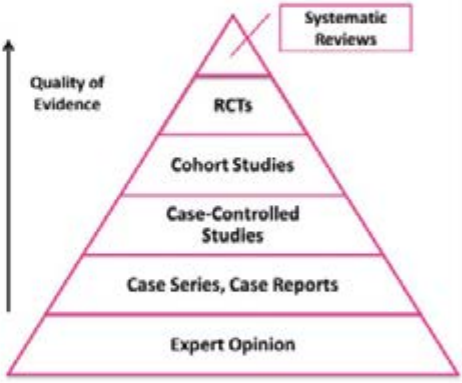
Session 1
Acquire
MENU

Types of Evidence

So what are the different types of evidence?

- Systematic Review
- Meta-analysis
- Randomised Controlled Trials (RCT)
- Cohort Study
- Case-Control Study

- Evidence on a topic is systematically identified, appraised and the evidence summarised.
- Systematic reviews are often used to answer therapeutic, preventative and diagnostic questions.



The diagram shows a pyramid with an upward-pointing arrow on the left labeled 'Quality of Evidence'. The pyramid is divided into six horizontal layers, from top to bottom: Systematic Reviews (highlighted with a red box), RCTs, Cohort Studies, Case-Controlled Studies, Case Series, Case Reports, and Expert Opinion.

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Module Overview:

In this module, we will discuss the national regulations and local policies and procedures that exist to ensure the safe and legal use of medicines within both the hospital and community setting.

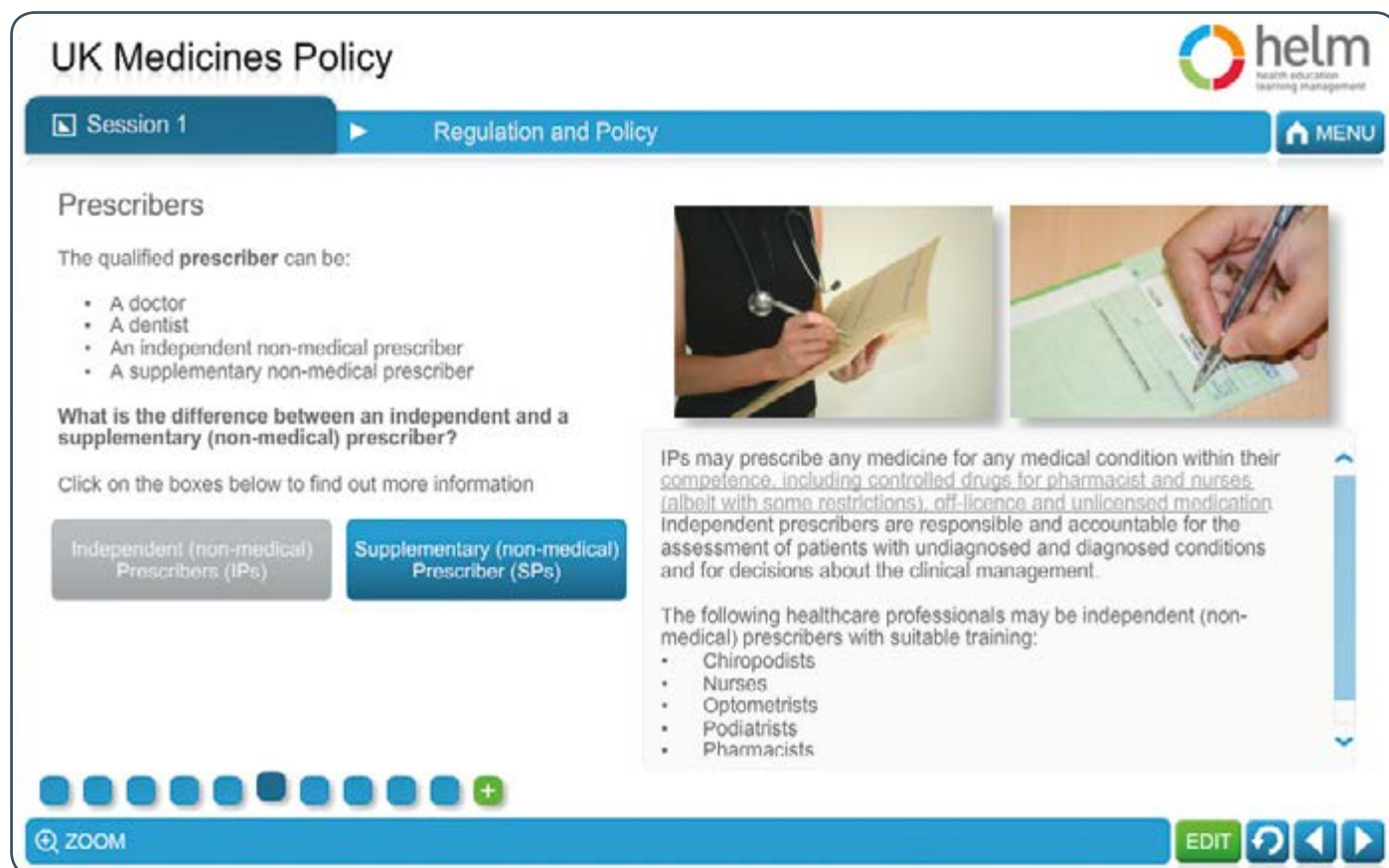
For policy and procedures relating to medicines management in care homes, see the SCRIPT 'Medicines Management in Care Homes' module.

Learning Objectives:

By the end of this module you should be able to:

- Discuss the Nursing and Midwifery Council's (NMC) Standards for Medicines Management.
- Describe the scope of the Human Medicines Regulations 2012, in relation to the:
- Authority to prescribe, supply and administer medicines.
- The use of medicines that are controlled by the Misuse of Drugs Regulations 2001.
- Storage, supply and destruction of medicines.
- Define what a 'Patient Specific Direction' (PSD) is and why local guidance in the form of a Medicines Policy informs the use of medicines in hospitals.

Whilst this eLearning is largely developed for qualified nurses, many elements will also be of value to other healthcare professionals who handle medicines.



The screenshot shows the user interface of the 'UK Medicines Policy' eLearning module. At the top, the title 'UK Medicines Policy' is displayed next to the 'helm' logo. Below the title, there is a navigation bar with 'Session 1' and 'Regulation and Policy'. A 'MENU' button is also visible. The main content area is titled 'Prescribers' and contains the text: 'The qualified prescriber can be:' followed by a bulleted list: 'A doctor', 'A dentist', 'An independent non-medical prescriber', and 'A supplementary non-medical prescriber'. Below this, a question is posed: 'What is the difference between an independent and a supplementary (non-medical) prescriber?'. Two buttons are provided: 'Independent (non-medical) Prescribers (IPs)' and 'Supplementary (non-medical) Prescriber (SPs)'. To the right, there are two images: one of a doctor writing on a clipboard and another of hands writing on a form. Below the images, a text box explains that IPs may prescribe any medicine for any medical condition within their competence, including controlled drugs for pharmacists and nurses (albeit with some restrictions), off-licence and unlicensed medication. It states that independent prescribers are responsible and accountable for the assessment of patients with undiagnosed and diagnosed conditions and for decisions about the clinical management. A list of healthcare professionals who may be independent (non-medical) prescribers with suitable training is provided: Chiropractors, Nurses, Optometrists, Podiatrists, and Pharmacists. At the bottom of the interface, there is a 'ZOOM' button, a '60' timer, and several navigation icons including 'EDIT', a refresh icon, and back/forward arrows.

Module Overview:

In this module, you will be provided with the basic knowledge required to utilise the British National Formulary (BNF) and British National Formulary for Children (BNFC) accurately and effectively.


We will discuss how the BNF and BNFC are constructed, as well as how best to find and use the information contained within them.

Learning Objectives:

By the end of this module you should be able to:

- Describe the basic layout and structure of the BNF and BNFC.
- Navigate the smartphone mobile app, online and printed book versions.
- Describe the information contained within General Guidance section.
- Find and accurately interpret the dose, route, frequency and indication for a given medicine.
- Find information on the licensed status of a medicine.
- Find information about the different formulations available for a medicine, and identify excipients contained within these.
- Find instructions on the administration of medicines given via intravenous infusions.
- Describe the information available in the appendices and indices of the BNF and BNFC.

Utilising the BNF(C)





Session 2
Prescribing Information
MENU

Pregnancy and Breastfeeding (1)

The general guidance in the front section of the BNF and BNFC provides the basic background on prescribing in [pregnancy](#) and [breastfeeding](#).

Information on use in pregnancy and breastfeeding can be found under the specific drug monograph.

Pregnancy

With systemic use: Avoid unless the potential benefit outweighs the risk.

Avoid during the third trimester (risk of closure of fetal ductus arteriosus *in utero* and possibly persistent pulmonary hypertension of the newborn); onset of labour may be delayed and duration may be increased.

Breast feeding

With oral use: Use with caution during breast-feeding.

Amount too small to be harmful but some manufacturers advise avoid.

Section of monograph for ibuprofen
Source: BNF and BNFC online (accessed February 2016)

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Module Overview:


In this module, we will provide an overview of anticoagulant therapy. We will discuss Vitamin K Antagonists (VKAs) (e.g. warfarin) and consider the indications and contraindications to treatment, the recommended dosing regimens, and monitoring requirements. We will also describe the adverse effects of VKAs so that you can safely administer the medicines and counsel patients on their effective use. The Script 'Anticoagulation Part 2' module supports this module.

Learning Objectives:

By the end of this module you should:

- Describe the basic pharmacology of Vitamin K Antagonists (VKAs).
- Discuss the indications for treatment, the recommended dosing regimens and duration of treatment.
- List the cautions and contraindications of treatment.
- Discuss the potential complications of therapy.
- Describe the monitoring requirements.
- Describe the common drug-drug and drug-food interactions.
- Counsel patients prescribed a VKA in order to minimise the risk of harm and to support adherence.
- Describe the role of the anticoagulant clinic and the importance of communication at the transfer of care.
- Discuss the national recommended standards for prescribing, dispensing and administration of anticoagulant therapy.

Anticoagulation Part 1



Session 1
Anticoagulation Overview
MENU

Duration of Treatment

Click on the buttons below for more information.

Cardiac Valves

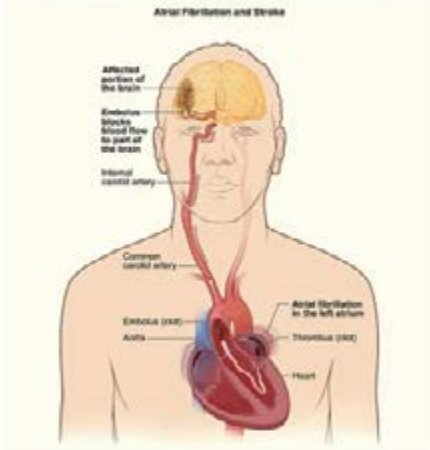
Venous Thromboembolism (VTE)

Atrial Fibrillation (AF)

There are two types of cardiac valves:

- **Mechanical:** require long-term oral anticoagulation therapy.
- **Biological:** may require warfarin for a short period of time, or it may be sufficient to manage the patient with antiplatelet cover (e.g. aspirin).

Following certain high-risk procedures in some patients (e.g. hip replacement) anticoagulation is recommended as prophylaxis for an extended period of time. The duration of treatment depends on the type of procedure and the patient's risk factors (e.g. obesity) for thrombosis. Surgical prophylaxis recommendations are usually governed by national/local policy or on specialist advice (e.g. haematologist).



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Module Overview:

In this module, we will discuss Direct Oral Anticoagulants (DOACs) and parenteral anticoagulants. We will consider the indications and contraindications to treatment, the recommended dosing regimens, and monitoring requirements. We will also discuss the adverse effects of DOACs and parenteral anticoagulants so that you can safely administer the medicines and counsel patients on their effective use. The Script 'Anticoagulation Part 1' module supports this module.

Learning Objectives:

- By the end of this module you should be able to:
- Describe the basic pharmacology of Direct Oral Anticoagulants (DOACs), unfractionated heparin and Low Molecular Weight Heparins (LMWHs).
 - Discuss the indications for treatment, the recommended dosing regimens and duration of treatment for each.
 - List the cautions and contraindications of therapy.
 - Discuss the potential complications of therapy.
 - Describe the monitoring requirements.
 - List some common drug-drug interactions.
 - Counsel patients prescribed a DOAC or a LMWH so to minimise the risk of harm and to support adherence.

Anticoagulation Part 2



Section 1
Direct Oral Anticoagulants (DOACs)
MENU

Mechanism of Action


Direct Oral Anticoagulants (DOACs) can be subdivided into two new classes of oral anticoagulant medicines. They have been developed to act on two different parts of the clotting pathway.

- **Direct Thrombin inhibitors** (e.g. dabigatran): inhibit thrombin generation, preventing the development of a clot.
- **Direct Xa Inhibitors** (e.g. rivaroxaban, apixaban and edoxaban): inhibit factor Xa, which inhibits thrombin generation and prevents the development of a clot. Note the nomenclature - they end in 'xaban', banning Xa.

They are oral formulations that, at present, **do not require regular monitoring** (such as the INR with warfarin).

Unlike warfarin, these medicines have a predictable anticoagulant response that is reflected by:

- Fixed doses.
- No routine regular monitoring.
- Rapid onset of action (1-4 hours).
- Half-life of between 7-14 hours with normal renal and liver function.
- A combination of renal and liver clearance (each drug is different).



```

graph TD
    Prothrombin --> Thrombin
    FactorXa --> Thrombin
    Thrombin --> Fibrinogen
    Fibrinogen --> Fibrin
    Dabigatran --> Thrombin
    Rivaroxaban --> FactorXa
    Apixaban --> FactorXa
    Edoxaban --> FactorXa
    
```

**Adapted from Figure 1, Brighton T. New oral anticoagulant drugs - mechanisms of action. Aust Prescr 2010;33:38-41*

ZOOM
EDIT
Navigation icons

Module Overview:

In this module, we will describe acute, chronic and breakthrough pain. We will highlight the importance of undertaking a well conducted pain assessment and discuss the non-pharmacological approaches to pain management.


The Script '*Pharmacological Pain Management*' and '*Advanced Pain Management*' modules provide content to support this module.

Learning Objectives:

By the end of this module you should be able to:

- Discuss how pain can be classified according to its underlying pathology, speed of onset and the way it responds to analgesic treatment.
- Describe some of the models and frameworks available to assess and measure pain.
- Discuss the importance of shared decision-making in pain management, taking into account the priorities of the patient and their relatives and/or carers.
- Describe the non-pharmacological options available for the management of pain.
- Describe the importance of effective communication in the management of pain.

Introduction to Pain Management



Session 1 ▶ Pain MENU

Classifying Pain

Pain can be classified in different ways according to the underlying pathology, speed of onset and the way the pain responds to analgesic treatment. In order to accurately assess a patient and provide adequate pain relief, you must be able to distinguish between the different types of pain.

Pain is typically classified by either:

Duration (e.g. acute and chronic pain); or	Physiological origin (e.g. nociceptive and neuropathic pain)
<ul style="list-style-type: none">• Acute pain is usually short-lived and resolves when the painful stimulus is removed (e.g. spraining an ankle, stubbing a toe). It provides the body with a warning that often helps to prevent further damage. The pain usually diminishes as healing progresses.• Chronic pain persists despite the trauma or injury healing and is often present for more than 3 months.	

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Module Overview:

In this module, we will discuss the pharmacological management of pain. We will consider the indications, dosing, administration and adverse effects of medicines used in pain management, and how you can minimise the risk of harm to your patients.


The Script 'Introduction to Pain Management' and 'Advanced Pain Management' modules provide content to support this module.

Learning Objectives:

By the end of this module you should be able to:

- Describe how the WHO Pain ladder assists in the pharmacological management of both acute and chronic pain.
- Discuss the risks associated with paracetamol and Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), and how these may be minimised.
- List the weak opioid analgesics available for prescribing in the UK, and when they are appropriate for use.
- List strong opioid analgesics, and understand how they are initiated and titrated.
- List the medicines recommended for the management of neuropathic pain, and how these are initiated.
- Describe the signs and symptoms of toxicity associated with the administration of local anaesthetics.

Pharmacological Pain Management



Session 2
Neuropathic Pain
MENU

Treatment

A multidisciplinary approach is needed to optimise the treatment outcome for patients with neuropathic pain. Regular review and good communication with the patient is necessary to monitor their response to treatment, and balance this against the potential for adverse effects.


Treating the underlying cause

Treatment of the underlying cause may help manage pain. For example, if a patient has diabetic neuropathy, then good diabetes control may help to ease the associated pain.

Pharmacological Therapy

Neuropathic pain may respond poorly to standard analgesic therapy. At present, treatment guidelines do not recommend a single gold standard treatment for the management of neuropathic pain.

Recommendations are for an antidepressant or antiepileptic drug as first-line non-specialist treatment, either alone or in combination together with non-pharmacological management such as surgical treatment and psychological interventions.



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Module Overview:

In this module, we will provide you with the basic knowledge required for utilising the BNFC accurately and effectively when prescribing and administering medicines for children.

We will discuss how the legacy version of the BNFC is constructed and how best to find and use the information contained within it.

This module is based on collaborative material developed with the Royal Pharmaceutical Society, Birmingham and Solihull Local Practice Forum, and the Neonatal and Paediatric Pharmacists Group.

The legacy version is the BNFC prior to the modifications made in November 2015, still available via Medicines Complete or the version accessed via NICE.

Learning Objectives:

By the end of this module you should be able to:

- Describe the basic layout and structure of the BNFC and navigate your way around both the online and book version.
- Describe the information contained within the 'General Guidance' section.
- Find, and accurately interpret, the dose, route, frequency and indication for a given medicine.
- Find information on the licensed status of a medicine.
- Find information about the different formulations available for a medicine, and identify excipients contained within these.
- Find instructions on the administration of medicines given via intravenous infusions, as well as those specifically for neonatal intensive care.
- Describe the information available in the appendices and indices of the BNFC.

Utilising the BNFC Legacy



Session 2 Prescribing Information MENU

Pregnancy and Breastfeeding (1)

The 'General Guidance' section provides the basic background on prescribing in pregnancy and breastfeeding.

Information can also be found under the specific drug monograph.

IBUPROFEN

Additional information interactions (Ibuprofen).

Cautions see [notes above](#)

Contra-indications see [notes above](#)

Hepatic impairment see [notes above](#)


Renal impairment avoid in severe impairment; see also [notes above](#)

Pregnancy see [notes above](#)

Breast-feeding amount too small to be harmful, but some manufacturers advise avoid; see also [notes above](#)

Side-effects see [notes above](#)

Licensed use not licensed for use in children under 3 months or body-weight under 5 kg



*Section of monograph for ibuprofen
Source: BNFC online (accessed November 2014)*

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Module Overview:


In this module we will explore the differences in drug handling across various age groups. We will briefly discuss the identification and prediction of drug interactions and adverse drug reactions in the paediatric population.

Learning Objectives:

By the end of this module you should be able to:

- Describe how children and neonates handle medicines differently from adults and how this will influence prescribing.
- Explain how the processes of drug metabolism differ in neonates and children compared to adults.
- Relate the pharmacokinetics of a drug to the adjustments in dose, frequency and choice of formulation required for children.
- Define an Adverse Drug Reaction (ADR), and explain the role and function of the Yellow Card Scheme.
- Explain the difference between pharmacokinetic and pharmacodynamic drug interactions and list some examples of each.

Developmental Pharmacology




Session 1 ▶ Understanding Developmental Pharmacology MENU

Oral and Enteral Absorption

Children are not just small adults. Developmental changes in the absorptive surfaces of the gut, gastrointestinal (GI) motility and intraluminal pH can alter the rate and extent of drug absorption.

GI motility | **Intraluminal pH**

- Gastric emptying times are variable, but are generally slower in neonates and infants compared to adults.
- Most drugs are absorbed in the small intestine, so slower gastric emptying results in variable oral absorption in infants.
- Drugs such as paracetamol, phenytoin and phenobarbital show erratic drug absorption in this group.
- In older children GI motility improves, so for drugs absorbed in the small intestine, the time to peak plasma concentration speeds up and the duration of action shortens.



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Module Overview:


In this module we will explore the practicalities of prescribing, supplying and administering medicines to children. When discussing dose calculations based on weight, we will describe the principles of fluid management. We will discuss the additional factors to consider in the paediatric population, such as the use of unlicensed and 'off-label' preparations.

Learning Objectives:

By the end of this module you should be able to:

- Discuss why children are more vulnerable to medication errors, and how to avoid them.
- Demonstrate the different ways a dose may need to be calculated, including those based on body weight and Body Surface Area (BSA).
- Calculate maintenance and rehydration fluid requirements for children of all weights and ages.
- Explain what is meant by unlicensed and off-label prescribing, and provide example of this in paediatrics.
- Recognise that age appropriate medicines are not always readily available for children, and understand how this is managed in practice.


Practical Prescribing



Session 2 Communication MENU

Medicines in Schools (1)

Children with chronic conditions, such as asthma or eczema, and those receiving treatment for acute illness may require medication to be given at home or school.



Medicines for children may have to be given in school and should be provided in a clearly labelled container with each child's name and instructions for dosing.

Neither the Department of Health nor the Department of Education provide guidelines that deal specifically with administration of medicines by teachers. Schools are largely left to determine their own policies.

- Try to avoid the need for medicines during school time where possible.
- When it is unavoidable, consider prescribing and supplying the school time dose in a separate labelled container with the child's name and instructions for dosing.
- If a container is inside a cardboard box, it is important to ensure the container itself is labelled and not just the box.
- Most schools will request written permission from parents to administer the medicine.

Some schools request that medicines are stored away from the classroom (e.g. in the school office). It is important that it remains accessible to the child.

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Module Overview:


In this module, we will discuss the medicines most commonly used in the neonatal intensive care unit and when they may be considered for use. We will approach this in a systematic way by working through three clinical cases.

Learning Objectives:

By the end of this module you should be able to:

- Describe how neonates handle drugs differently from adults and how this influences prescribing.
- List the medicines recommended to be administered in a resuscitation situation, and be able to calculate the required doses based on weight.
- Explain how therapeutic hypothermia can affect the pharmacokinetics of medicines.
- Select appropriate fluid and parenteral nutrition and calculate the volumes required.
- Explain the nutritional requirements and supplementation required to ensure adequate growth and development.
- Prescribe medicines for neonates to manage common problems, such as respiratory distress syndrome, hypotension, seizures and pain.

Neonates




Session 1 ▶ Case 2: Baby Bilal MENU

Activity 1(A)

Baby Bilal did not require active resuscitation at birth and was transferred to the neonatal unit with CPAP. He was commenced on CPAP 6cmH₂O with an initial O₂ requirement of 35%.

Over the next hour JT has increased work of breathing and his oxygen requirements have increased to 60%. His X-ray is shown below.



Which ONE of the following diagnoses is MOST LIKELY?

- Congenital pneumonia
- Heart failure
- Respiratory distress syndrome
- Retained lung fluid

Yes, that's right.

- Respiratory distress syndrome occurs due to a deficiency of surfactant, produced by type II pneumocytes.
- Production begins from around 24-30 weeks, and increases to term.
- Insufficient surfactant results in reduced lung compliance.

ZOOM EDIT

Module Overview:

In this module, we will explore the pharmacological management of common neurological conditions such as epilepsy, headaches and sleep disorders. We will use case-based examples to discuss common prescribing scenarios in paediatric neurology, such as how to initiate and wean antiepileptic treatment regimens.


We will also briefly discuss the medicines most commonly used in the management of dystonia and spasticity.

Learning Objectives:

By the end of this module you should be able to:

- Initiate pharmacological treatment for the management of acute seizures in the pre-hospital setting.
- Counsel relatives/carers on the safe management of acute seizures in the pre-hospital setting.
- List the patient factors to be considered when selecting an antiepileptic medicine.
- Select appropriate antiepileptic treatment and start treatment according to BNFC guidelines.
- Counsel children and/or their relatives/carers on the administration and adverse effects of antiepileptic treatment.
- Manage infantile spasms and monitor for the adverse effects of treatment.
- Initiate therapy for spasticity and oral secretions.
- Initiate therapy for sleep disorders.
- Select an appropriate treatment for the management of migraine and cluster headaches.
- List the warning signs associated with headache that would warrant referral for further investigation.

Neurology



Session 1 ▶ Epilepsy MENU

Midazolam Administration


In the introductory case vignette, we considered the management of status epilepticus for Stuart.

Families and any other carers must be trained on how to administer buccal midazolam. This training would usually be provided by a nurse specialist. It is good practice to provide an [information sheet](#) and personalised treatment plan in addition to any demonstration and counselling.

Parents should access emergency help as soon as they administer buccal midazolam, as respiratory depression is a known adverse effect of benzodiazepines.

This is why the licence only allows one dose to be given in the community setting, and then recommends a call to 999 and immediate transfer to hospital.

Click play to watch the video



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Module Overview:

In this module, we will discuss prescribing for skin conditions.

We will look at a number of important areas in management, including topical therapy for skin disease, safe prescribing of topical corticosteroids and an overview of the use of systemic treatments.

We will consider special circumstances relevant to prescribing, including in adolescence and in those with suspected or proven multisystem disease.

Learning Objectives:

By the end of this module you should be able to:

- Initiate therapy for the management of atopic eczema and step treatment up and down according to response and as recommended by NICE guidance.
- Select and prescribe appropriate topical treatments for psoriasis.
- List the systemic treatments available for psoriasis and explain their use to patients and their families.
- Select and prescribe topical therapy and antibacterials for acne vulgaris, and list the indications for isotretinoin use.

- Differentiate between common skin infections and select appropriate treatment.
- Recognise when disease severity warrants systemic therapy, such as with immunosuppressants.
- Recognise which haemangiomas need treatment and be able to commence treatment with propranolol.
- Treat and manage common causes of hair loss.
- Manage skin erythemas and Epidermolysis Bullosa (EB) in the newborn.
- Recognise drug reactions and manage the early stages of the most severe, including Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN) and DRESS syndrome (Drug Reaction with Eosinophilia and Systemic Symptoms).

Dermatology



Session 1 ▶ Atopic Eczema MENU

Emollients

Emollients, along with ongoing education for the parent and child, are the mainstay of atopic eczema treatment. There are key differences between the types of emollients available:

- **Ointments:** greasy, encourage hydration, fewer preservatives.
- **Creams:** less greasy, higher water content, more preservatives.
- **Lotions:** high water content, may be alcohol based (can sting); generally only for use on the scalp.

International Skin care Nursing Group (ISNG) and the British Dermatological Nursing Group (BDNG) *Best practice in emollient therapy: a statement for healthcare professionals* provides examples of lotions, creams, gels and ointments based on how greasy they are. It provides guidance on the measures appropriate for application (based on an adult).

Mild atopic eczema Moderate atopic eczema Severe atopic eczema



Example, taken from the Best Practice Statement (2012): Best practice in emollient therapy: a statement for healthcare professionals. Dermatological Nursing (suppl); 8: 3, 1-22.

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Module Overview:

In this module we will discuss the underpinning knowledge required to prescribe legally, safely and unambiguously. Key areas of good prescribing practice will be emphasised along with a more in-depth discussion for the rationale behind each of the highlighted points.


Learning Objectives:

By the end of this module you should be able to:

By the end of this session, and with reference to 'The Ten Principles of Good Prescribing' (accessible via the British Pharmacological Society website), you will be able to:

- Describe the legal aspects of prescribing, including the prescribing of drugs subject to control under the Misuse of Drugs Act 1971.
- Discuss the different types of prescription documentation available in both primary and secondary care.
- Explain what is meant by unlicensed and off-label prescribing and the role of any applicable good practice guidelines.
- Highlight the standards expected of both hand-written and computer-generated prescriptions.
- Discuss the importance of prescribing within the limits, knowledge, skills and experience of the prescriber.

Prescription Documentation



Session 1 ▶ Good Prescribing Practice MENU

Activity 1

Identify whether the following abbreviations are approved or not approved when writing a prescription.

QDS	Approved	✓
ISMN	Not approved	✓
SC	Approved	✓
µgrams	Not approved	✓
mg	Approved	✓
U	Not approved	✓

Yes, that's right.

Approved abbreviations include:

- **QDS**: Quater die sumendum. Latin abbreviation for 'to be taken four times a day'.
- **SC**: is an acceptable abbreviation for the route 'subcutaneous'.
- **mg**: is an approved abbreviation for milligrams.

Abbreviations that are not approved and should be avoided include:

- **ISMN**: is an abbreviation of isosorbide mononitrate. Drug names should not be abbreviated, as they can be misinterpreted or misread.
- **µgrams or meg**: is not approved. Micrograms should be written out in full.
- **U**: is not an approved abbreviation for 'Units' (or 'IU' for international units). The 'U' can be interpreted as a zero and the term 'IU' as a '10', potentially leading to a ten or 100 fold overdose.

ZOOM EDIT

Module Overview:

In this module we will focus on pharmacodynamics (the interactions between drugs and receptors) and discuss the range of chemically sensitive sites, which mainly exist on proteins. Pharmacokinetics is considered in a separate module.

We hope this module serves as a reminder of the fundamental topics in pharmacology you will have learnt as a medical student, and aims to help you to appreciate the relevance of this knowledge to your early clinical practice.

Learning Objectives:

By the end of this module you should be able to:

- Define the following terms: agonist, antagonist, partial agonist, and allosteric modulator.
- Define, and explain the differences between affinity, efficacy and potency.
- Use graphical methods to relate dose and response.
- Define up-regulation and down-regulation of receptors and using examples, explain how this can affect the response to drugs or alter physiological behavior.
- Explain, using key examples, how drugs can act on different types of chemically sensitive sites, including: G-protein coupled receptors, ion channels, nuclear receptors, carrier molecules, and enzymes.

Fundamentals of Pharmacology

Session 1

Dose-Response Relationship

MENU

Efficacy and Potency: G-protein Coupled Receptors

G-protein coupled receptors are the targets for many commonly used drugs. They signal to other proteins using small molecules called **G-proteins**, so the way in which the binding of a drug affects G-protein management will be the first of several steps that determine the relationship between affinity and response.

Just as with receptor occupancy, the correlation between the size of the response and the amount of drug is usually represented using a logarithmic scale for drug concentration and often using a percentage scale to describe the response magnitude (*Figure 2*).

The shape of the curve is usually sigmoidal because the occupancy of drugs on receptors is central to drug action. This relationship defines the **potency** of the drug (basically, the input-output relationship; how much goes in and what do you get out). However, it should be remembered that the intervening pathway from cellular signalling to systemic responses are complex, and do not always match the simple relationship between drug concentration and effect.

The **potency** of a drug is often described by the concentration (or dose) that is able to elicit 50% of the maximal response (**EC50** or **ED50**). A drug that has a higher potency achieves that size of response at a lower concentration.

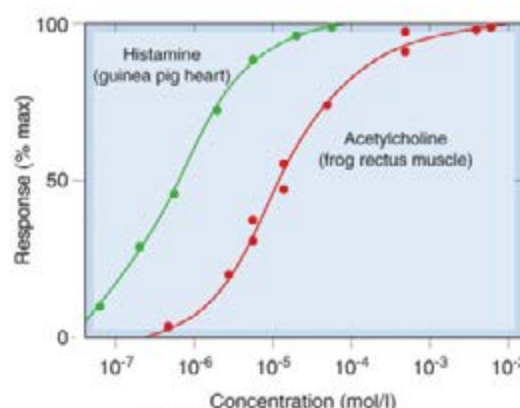


Figure 2. Examples of two concentration response curves demonstrating a sigmoidal relationship with log concentration.

Source: Rang H.P, Dale M.M, Ritter J.M, Flower R.J. Rang and Dale's Pharmacology 6th Ed (2007). Fig 2.3, pg. 12



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Module Overview:

In this module, we will discuss the importance of an accurate and complete drug history, and what can go wrong when this information is not gathered or used correctly.

We will describe the different sources of information available to confirm the drug history, and their limitations. Problem drugs will be identified, including those which are often omitted from the history. We will give practical advice on how to obtain a safe and effective drug history.

Finally, we will discuss the importance of reconciling and documenting information about a patient's medicines on admission to, transfer in, and discharge from hospital, as outlined in the NICE Medicines Reconciliation guidance.

Learning Objectives:

By the end of this module you should be able to:

By the end of this session, and with reference to 'The Ten Principles of Good Prescribing' (accessible via the British Pharmacological Society website), you will be able to:

- Describe the information needed to complete a safe and effective drug history.
- List the different information sources available to you when obtaining or confirming a drug history, and their limitations.
- Overcome difficulties in eliciting a drug history.
- Identify non-adherence and the impact this can have on the drug treatments you prescribe.
- Define 'Medicines Reconciliation' and know your role and responsibility in this process.
- Discuss the importance of effective communication at the transfer of patient care.

Taking a Safe & Effective Drug History

Introduction

Overview

MENU

Introduction

You must establish an accurate drug history for every patient you see whether in a clinic or on a ward, because any therapeutic decisions made while the patient is in your care, and after transfer, will be based on it.

A comprehensive drug history should identify all prescription and non-prescription drugs, including illicit drugs, being taken by your patient.

Establish if there are any drug allergies or intolerances, and the nature of these, so your patient is not exposed to such agents during their admission.

Medicines Reconciliation ensures the history you take is suitably documented, including details of where the history was obtained, any discrepancies between sources, and any problems identified. This, together with the drug history will ensure the healthcare team has a complete knowledge of what your patient is actually taking.



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Module Overview:

In this module we will explore medicines adherence and other related terminology. We will consider levels of and reasons for non-adherence.

We will also discuss methods to promote shared decision-making and interventions to increase adherence to, and persistence with, prescribed medication regimens.

Learning Objectives:

By the end of this module you should be able to:

- Discuss medicines adherence and discuss the importance of informed choice and shared decision-making in optimising the safe and effective use of medicines.
- Define adherence and how this differs to compliance in relation to drug treatment.
- Discuss the influences that affect your patients' adherence to medicines.
- Describe the interventions you can make to actively support adherence to medicines and treatment regimens.
- Discuss the implications of non-adherence to both your patient and the National Health Service (NHS).

Adherence and Concordance

Session 1
Definitions
MENU

Shared Decision-Making

The NICE Guidance on medicines adherence refers to the term 'shared decision-making about medicines'. This is analogous with an interpretation of concordance, which refers explicitly to the health professional/patient interaction. Shared decision-making can affect 'adherence', which is reserved to describe the medicine-taking behaviour of patients.

On the right is a simplified representation of the patient pathway (Figure 2). In this process there are two opportunities for 'consultation', one with the healthcare professional or 'prescriber' and the other with the dispensing professional. Both stages provide an opportunity to consider the behaviour and beliefs of the patient, provide information, confirm understanding and agree a treatment plan. Failure to do so can result in a medicine which is prescribed but not dispensed, or dispensed and not taken, and this may also influence future medicines-taking behaviour.

Click on the diagram to enlarge

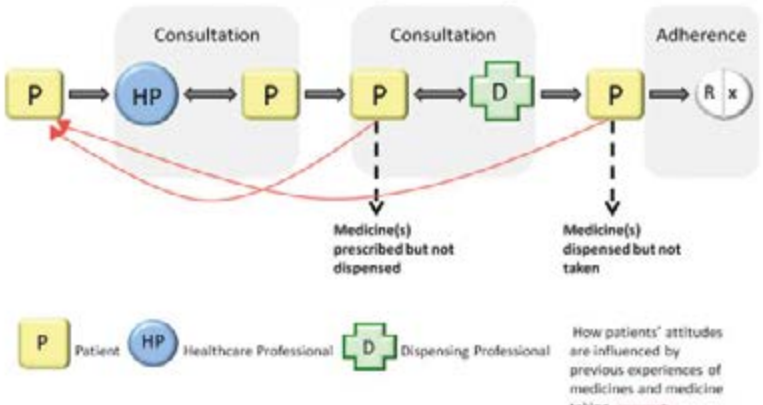


Figure 2. Simplified representation of the patient pathway.

Source: Adapted from *Medicines Adherence: involving patients in decisions about prescribed medicines and supporting adherence*. The National Collaborating Centre for Primary Care (2009).

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Module Overview:

In this module we will discuss the factors that govern the rate and extent of a drug's action, from when it is administered until it leaves the body.

Understanding clinical kinetics will help you make better therapeutic choices and can be applied to your day-to-day prescribing.


Learning Objectives:

By the end of this module you should be able to:

By the end of this session, and with reference to 'The Ten Principles of Good Prescribing' (accessible via the British Pharmacological Society website), you will be able to:

- Describe the different routes of drug administration.
- Describe how a change in route can influence pharmacokinetic parameters.
- Define and explain the terms 'bioavailability', 'volume of distribution', 'half-life', and 'clearance', and what factors can affect them.
- Describe simple models of pharmacokinetics using graphical representation.
- Discuss the main processes of drug metabolism in the body and the factors affecting it.
- Relate the pharmacokinetics of a drug to the adjustments in dose, frequency and choice of formulation.

Clinical Kinetics




Session 2 ▶ Pharmacokinetics MENU

The Kidney and Drug Metabolism

The kidneys excrete water soluble metabolites produced by the liver. Naturally, if the renal function is impaired, the metabolites accumulate and may cause problems. For example, 10% of morphine is metabolised to morphine-6-glucuronide. This active metabolite has an analgesic effect comparable to morphine, and is sedative. It is excreted via the kidneys and has a half-life of approximately 96 hours. In patients with renal dysfunction, continuous administration of morphine will lead to an accumulation of metabolites and subsequent toxicity.

Some drugs such as digoxin are not metabolised, but are excreted 'unchanged' by the kidneys. In severe renal dysfunction, the elimination half-life can be prolonged to up to 96 hours, causing an accumulation of digoxin and an increased risk of toxicity.

Calculate the creatinine clearance to assess the degree of renal impairment and make any dose adjustments.



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Module Overview:

Dose calculation errors can lead to significant patient harm. Neonates, infants and children are particularly vulnerable.


In this module we will develop the underpinning knowledge and numeracy skills required for you to perform dose calculations competently and accurately in clinical practice. We will provide examples based on scenarios you may encounter in clinical practice and then test your knowledge throughout using in-module activities. We will highlight some of the common pitfalls when calculating doses and explain how you can avoid them.

Learning Objectives:

By the end of this module you should be able to:

- List some common calculation errors and how these may occur.
- Describe the standards in place to reduce the risk of medication errors as a result of calculation errors.
- Access and use appropriate resources to assist your calculations.
- Convert units and measures and calculate dose equivalents.
- Discuss the various terms used to define a patient's weight, and calculate doses based on these parameters.
- Describe the dose adjustments that may be required in hepatic or renal dysfunction.
- Calculate simple and complex dose regimens for enteral and parenteral administration.
- Apply simple mathematics to your day to day prescribing.

Dosing and Calculation




Session 1 Standards MENU

Average Weight

Most drug trials are conducted on an 'average' patient, so there is limited data available for patients at the extremes of weight. In calculating drug doses, the product literature will guide you to the most appropriate weight to use. As a rule of thumb:

- Drugs that are solely distributed in blood are likely to need dosing on lean or ideal body weight, and
- Drugs that penetrate into tissues are more likely to be dosed on actual or proportional body weight

When calculating drug doses, the product literature will guide you to the most appropriate weight to use. For patients at the extremes of the weight range it is advisable to seek further information on appropriate dosing, particularly of those drugs with a narrow therapeutic index.



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Module Overview:

In this module we will discuss some of the issues posed in clinical practice by the availability of different drug formulations. We will provide information on the administration of medicines to patients, and suggest alternative options to help those patients who can't receive their medication by more conventional routes.

Learning Objectives:

By the end of this module you should be able to:

- Recall how different formulations of a drug can differ in their pharmacokinetic properties and how this can affect dosing.
- Select the route or formulation to achieve an optimum therapeutic response and avoid harm.
- Describe how formulation change can help patients take their medicines and appreciate the value of sharing decisions with the patient when choosing suitable formulations.
- Explain how the timing of administration can be crucial for therapeutic response and safety.
- Describe the factors that should be considered when prescribing and administering unlicensed medicines.
- Describe the relevance of consent in relation to drug administration.

Formulation and Administration



Session 2 ▶ Drug Administration [MENU](#)

Clinical Skills Video: Subcutaneous Injections



The Ron Grimley Undergraduate Centre (RGUC) is a clinical teaching academy based at The Dudley Group NHS Foundation Trust. Tomorrow's Clinicians is a series of films produced in-house by RGUC, with the aim of enhancing undergraduate and postgraduate medical education. A wide range of clinical skills procedures are covered in more than 30 other films in the series.

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Module Overview:

In this module we will discuss the safe and appropriate prescribing of antibacterials in patients with known or suspected infections.

We will review the different classes of antibacterials available, when they should be prescribed empirically, and why careful use of antibacterials is important for both patient and public health.

We will refer to Public Health England's Antimicrobial Prescribing and Stewardship competencies and Start Smart - Then Focus toolkit throughout.

Learning Objectives:

By the end of this module you should be able to:

- Describe the different classes of antibacterials available and their site of action on a microorganism.
- Describe how bacteria can be resistant to antibacterials.
- Explain why certain antimicrobials might be restricted in a Trust, and how access to them could be obtained.
- Know where to look for guidelines on treating infections and why adherence is important.

Prescribing in Infection

Session 1

Antibacterial Action and Activity

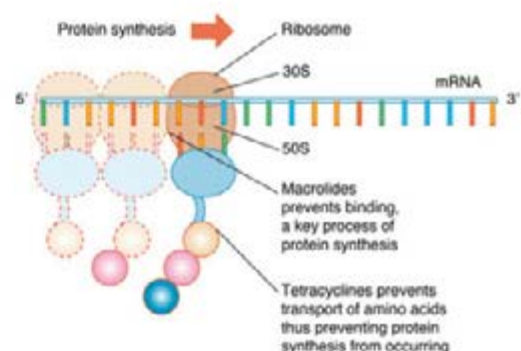
MENU

Protein Synthesis Inhibition

A number of antibacterial classes inhibit protein synthesis by binding to bacterial ribosomes and interfering with their function.

Macrolides (e.g. clarithromycin) and tetracyclines (e.g. doxycycline) are **bacteriostatic agents** - they inhibit protein synthesis, stopping the cell from growing. Bacteriostatic agents do not kill the cell, but allow host defences to deal with the infection.

Aminoglycosides such as gentamicin are **bactericidal agents**; they inhibit a vital cellular process which leads to cell death. This bactericidal activity is useful in sepsis, where their activity is usually combined with that of a cell wall active agent to target dual sites in the infecting organism.



During translation a ribosome (large, beige) moves left to right reading the mRNA and facilitating the binding of amino acids (coloured spheres) to each other to form a protein. Both macrolide and tetracycline antibacterials disrupt bacterial cell growth through inhibiting the translation stage of protein synthesis.



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Module Title: Drug Allergy and Anaphylaxis

Module Overview:

In this module, we will provide an overview of drug allergy, and pay particular attention to anaphylaxis and reducing the risk of such reactions.


We will describe the signs and symptoms of Type I (immediate) reactions, and discuss the assessment and management of these. Finally we describe the follow-up of patients who have experienced a severe reaction.

Learning Objectives:

By the end of this module you should be able to:

- Take an accurate history of any previous reactions to drugs, medicinal and related products and non-drug allergies.
- Examine a drug chart, and decide which drugs might pose a risk to the patient in light of known allergies.
- Recognise the signs and symptoms of allergic reactions to drugs.
- Distinguish allergic reactions from other adverse drug reactions.
- Manage acute allergic reactions to drugs.
- Arrange appropriate follow up in cases of suspected drug reactions.

Drug Allergy and Anaphylaxis*



Session 2
Treating Allergic Reactions
MENU

Adrenaline

Emergency treatment always consists of basic cardiopulmonary support and simultaneous **intramuscular** injection of adrenaline (Table 4).

Patient	Dose of adrenaline	Volume of adrenaline 1:1000*
Adult and child over 12	500 micrograms	0.5 mL
Child 6 – 12 years	300 micrograms	0.3 mL
Child less than 6 years	150 micrograms	0.15 mL

Table 4: Intramuscular dose of adrenaline to be administered in the emergency treatment of anaphylaxis.

**Adrenaline 1:1000 is equivalent to 1mg/ml.*

You can repeat the intramuscular dose of adrenaline if there is no improvement in the patient's condition. Further doses can be given at about 5-minute intervals according to response.

In the shocked patient, intramuscular absorption is fast, and so the onset of action is rapid.

The subcutaneous route is not recommended as absorption is too slow. Similarly, inhaled/nebulised adrenaline is slow to act.

Intravenous administration may cause life-threatening arrhythmias and hypertension. It should only be prescribed and administered by specialist physicians experienced in its use. Pulse oximetry and ECG monitoring is essential when the intravenous route is used.

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PRESCRIBING - PRESCRIBING IN MEDICAL EMERGENCIES

Module Title: Poisoning

Module Overview:

In this module we will consider poisoning as a result of drug overdose.


The module will explore the clinical toxicology of commonly prescribed drugs and the management required to alleviate their effects. It will provide practical advice on where to look for information should poisoning be suspected.

Learning Objectives:

By the end of this module you should be able to:

- Describe the risks associated with taking specific drugs in overdose.
- Manage a patient presenting with poisoning.
- Describe the role of the National Poisons Information Service (NPIS).
- Describe the information available on TOXBASE and how to access this.

Poisoning



Session 1 ▶ Opioids MENU

Case Vignette 1

A 23-year-old man is admitted to the Emergency Department. He was found in a bed-sit with wraps containing a brown substance in his possession. He has pin-point pupils, a respiratory rate of 5 breaths per minute, a blood pressure of 80/45 mmHg and a slow pulse. He only responds to pain. A presumed diagnosis of opioid poisoning is made

Which TWO of the following should be initially prescribed for the management of opioid poisoning?

Adrenaline	<input type="checkbox"/>
Intravenous fluids	<input type="checkbox"/>
Naloxone	<input type="checkbox"/>
Respiratory stimulants such as doxapram	<input type="checkbox"/>
Sodium bicarbonate	<input type="checkbox"/>

CONFIRM



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Module Title: Cardiac Arrest

Module Overview:


This module will focus on the drugs and therapeutics used during and immediately following cardio-pulmonary resuscitation (CPR) in an adult. It is based on the latest Resuscitation Council guidelines (2010). This module will help you to revise the guidelines for resuscitation of patients in cardiac arrest and management of reversible causes, but does not replace formal Advanced Life Support (ALS) training.

Learning Objectives:

By the end of this module you should be able to:

- Explain the steps involved in the management of an adult in cardiac arrest.
- Recall the reversible causes of cardiac arrest.
- Describe the modifications to practice when resuscitating a pregnant woman.
- Manage the care of patients post resuscitation.

Cardiac Arrest



Session 1 Management of Cardiac Arrest in Adults MENU



Basic Life Support

The initial management of an unresponsive patient is basic life support. After checking for safety and shouting for help, the airway should be checked and any visible obstruction cleared.

The airway should be opened using either a head tilt, chin lift, or jaw thrust if cervical spine injury is suspected. Whilst keeping the airway open, breathing and circulation should be assessed by looking at the chest for rise and fall, listening at the mouth for breath sounds, and palpating for the carotid pulse for a maximum of 10 seconds.

If cardiac arrest is confirmed, an emergency call should be placed (by calling 999 or 2222 in hospital) and CPR commenced.

CPR should be given at a ratio of 30 chest compressions to 2 breaths. Chest compressions should be given at a depth of 5-6 cm and a rate of 100-120 per minute. If a definitive airway is in place (e.g. an endotracheal tube), continuous chest compressions should be given instead. The placement of a definitive airway by a trained person is desirable as this minimises interruptions to chest compressions. However, the risk of misplacement means that if there is no trained person to place a definitive airway, interrupted CPR at a ratio of 30:2 should be given.



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Module Title: Fluids

Module Overview:

In this module we will discuss the basic physiological principles of fluid replacement, which will help you understand the dynamic nature of fluid compartments. It will allow you to calculate requirements, safely prescribe both fluids and electrolytes in adults, monitor response to therapy, and deal with complications.


It will consolidate your knowledge about fluid status assessment and subsequent management.

Learning Objectives:

By the end of this module you should be able to:

- Recall the signs and symptoms of hypovolaemia and hypervolaemia.
- Understand how to calculate fluid loss, gains and requirements.
- Understand how to how to calculate electrolyte requirements.
- Describe the difference between crystalloid and colloid fluid replacement therapy and when each might be appropriate for use.
- Monitor fluid replacement therapy effectively to avoid adverse effects and achieve optimal response.

Fluids



Session 1 ▶ Fluid Replacement HOME MENU

Case Vignette 1(A)

Think back to our patient ([click here to see his blood results again](#)).

You have assessed his fluid intake and output over the last two days, and have noted the following:

Total fluid intake:

- Oral 600 ml per day
- Water from metabolism 400 ml per day.

Total fluid output:

- Urine 1400 ml per day.

Insensible losses:

- Normally about 800 ml per day.
- As he is febrile and tachypnoeic it would be reasonable to double this volume.

Calculate his total fluid loss over the two days.

- 2000 ml
- 3000 ml
- 4000 ml
- 5000 ml
- 6000 ml ✓

Yes, that's right.

6000 ml

- Insensible losses 1600 ml per day = 3200 ml over two days.
- Urine output 1400 ml per day = 2800 ml over two days.
- 2800+3200 = 6000 ml

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Module Title: Diabetic Emergencies

Module Overview:

In this module, we will discuss the signs and symptoms of diabetic emergencies, including hypoglycaemia, diabetic ketoacidosis, and hyperosmolar hyperglycaemic state. For each, we will describe the immediate step-by-step management and continuing care in adults.

The Joint British Societies Inpatient Care Group provide comprehensive guidance on all the diabetic emergencies discussed here, all of which are available online.


Note that hospital Trusts are likely to have their own guidelines or protocols on the management of these emergencies. These should be used as the primary guidance alongside the general principles what we provide here.

Learning Objectives:

By the end of this module you should be able to:

- Manage hypoglycaemia in a conscious, semi- or unconscious patient.
- Take appropriate samples for unexplained episodes of hypoglycaemia.
- Describe the characteristic features of Diabetic Ketoacidosis (DKA).
- Initiate appropriate fluid resuscitation and a fixed rate intravenous insulin infusion for a patient with DKA.
- Effectively monitor a patient with DKA and know when to request senior review.
- Identify and treat any precipitating factors for an episode of DKA.
- Distinguish between DKA and Hyperosmolar Hyperglycaemic State (HHS).
- Describe the characteristic features of HHS.
- Describe the principles of treatment of HHS and initiate immediate management.

Diabetic Emergencies



Session 1
Hypoglycaemia
MENU

Unexplained Episodes

Severe spontaneous hypoglycaemia (blood glucose concentration below 2.2 mmol/litre) is rare in non-diabetic patients, and there are many possible causes.

If you see a patient who is apparently hypoglycaemic, ask yourself:
'Are they really hypoglycaemic?'

The symptoms of hunger, headache, and spots before the eyes are common; with signs of sweating, confusion, tachycardia, and reduced consciousness; a finger-prick blood glucose concentration is helpful.

If you think the patient is indeed hypoglycaemic, then ask a second question: **'Why?'**

Ask those present, and look at the drugs chart to see if insulin or antidiabetic medicines have been prescribed and administered that afford an explanation.

If you don't find a convincing explanation for the hypoglycaemic episode, do two things:

- 1 Take blood samples for a laboratory glucose to be measured urgently, and for serum to be stored to measure insulin, C-peptide, and insulin-like growth factor (also 3-beta-hydroxybutyrate if you can).
- 2

	Insulin	C-peptide	3-OH butyrate
Insulinoma	↑	↑	↓
Insulin poisoning	↑	↓	↓
Fasting alcoholic ketosis	↓	↓	↑

Blood test results in hypoglycaemia (blood glucose below 2.2 mmol/litre)
See Gama R et al. *Clinical and laboratory investigation of adult spontaneous hypoglycaemia. J Clin Pathol* (2003); 56: 641-46.

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PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Adverse Drug Reactions

Module Overview:


This module will explore the identification and prediction of adverse drug reactions (ADRs) in patients. It will also consider the public health burden of adverse drug reactions, and pharmacovigilance systems in the UK. The module will highlight the importance of reporting ADRs.

Learning Objectives:

By the end of this module you should be able to:

- Define an ADR and the classification of ADRs
- Identify susceptibility factors that place patients at increased risk of ADRs
- Discuss the concepts of pharmacovigilance and its importance for public health
- Explain the role and function of the Yellow Card scheme
- Identify sources of information on ADRs.

Adverse Drug Reactions



Session 1 ▶ Susceptibilities MENU

Genetics - Pharmacogenetics

Pharmacogenetics is the study of genetic variations that influence an individual's response to drugs. The examination of polymorphisms that code for drug transporters, drug-metabolising enzymes and drug receptors, are expected to provide us with a greater understanding of the genetics behind variations in drug response.

Pharmacogenetics may lead to a new era of personalised medicine. There are some important examples of severe ADRs with genetic components.


Abacavir

Abacavir, an antiretroviral, causes severe hypersensitivity reactions in 5 to 8% of patients. Screening for the **HLA-B*5701** allele has reduced hypersensitivity reactions, and has therefore helped to improve compliance and reduce the incidence of a life-threatening condition.

Anti-epileptics

Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are rare ADRs associated with numerous drugs and associated with substantial morbidity and mortality. The presence of the allele, **HLA-B*1502**, indicates an increased risk of skin reactions with carbamazepine, phenytoin, oxcarbazepine and lamotrigine.

Screen for the allele before prescribing anti-epileptics in patients of south east Asian ethnicity.



Stevens-Johnson syndrome.

ZOOM EDIT ↶ ↷

PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Medication Errors

Module Overview:

This module describes the nature and frequency of medication errors and examines the theory underlying general human error

It will introduce you to tips on reducing medication errors, and how you can identify and correct them. The session also describes how you, as healthcare professionals, should respond when you discover a medication error, and how it should be reported.


Finally, the role of electronic prescribing in preventing errors will be discussed.

Learning Objectives:

By the end of this module you should be able to:

- Define medication errors, including subtypes
- Identify individual and systems factors leading to error
- Describe how medication errors are reported
- Describe the role and impact of electronic prescribing


Medication Errors



Session 1 Human Error Theory MENU

Case Vignette 1

A staff nurse mistakenly administers intravenously a dose of soluble paracetamol, intended for administration via a nasogastric tube. The error is identified when the patient complains of pain at the injection site and redness is noticed along the course of the vein.



Promoting safer measurement and administration of liquid medicines via oral and other enteral routes.
National Patient Safety Agency (March 2007).

Which ONE of the following statements is CORRECT?

- Better labelling of the syringe containing the paracetamol would stop most errors such as this
- Education for trainee nurses is likely to prevent or substantially reduce the error rate in circumstances such as this
- Redesigning syringes for oral medicines so they are incompatible with intravenous lines might eliminate such errors

Yes, that's right.

- Redesigning syringes for oral medicines so they are incompatible with intravenous lines might eliminate such errors. Mechanical barriers are likely to be an effective way of reducing such slips. An area where this has had considerable publicity is the design of intrathecal administration devices.
- Better labelling of the syringe containing the paracetamol is unlikely to reduce the occurrence of such slips. Written warnings only have a limited and transient effect on error rates.
- Slips like this are likely to occur because of the trainee

ZOOM EDIT

PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Monitoring Drug Therapy

Module Overview:

In this module, we will discuss the importance of monitoring drug therapy and how effective monitoring can reduce the incidence of adverse drug reactions and improve therapeutic outcomes.


We will identify monitoring requirements for some common prescribing scenarios in both primary and secondary care.

Learning Objectives:

By the end of this module you should be able to:

- Discuss why it is important to monitor drug therapy.
- Identify the commonly prescribed drug therapies that require monitoring before, during and after treatment.
- Describe the strategies for monitoring drug therapy and the criteria that will determine whether a strategy will be clinically accepted.
- Identify common drugs that require Therapeutic Drug Monitoring (TDM) during treatment to avoid sub-therapeutic plasma concentrations and toxicity.
- Access information on the recommendations for monitoring drug therapy.

Monitoring Drug Therapy



Session 1 ▶ Monitoring for Adverse Effects MENU

Early Detection

Monitoring is often advocated as a way of avoiding or mitigating the harm from adverse drug reactions. An early example of this was monitoring the full blood counts of patients treated with intravenous chloramphenicol for evidence of potentially fatal bone marrow toxicity (chloramphenicol was historically used more frequently for systemic infections). However, the monitoring strategy (and indeed the use of the drug) fell out of favour as patients still died due to overwhelming sepsis as the frequency of monitoring could never detect the rapid development of the adverse effect.

In order for a monitoring strategy to be capable of detecting adverse effects, certain conditions must be met:

- There is a factor that is related to the harm and that can be monitored.
- Changes in the measurement are sensitive and specific to potential harm.
- Changes in the measurement are slow compared with the time between measurements.
- Changes in the measurement are rapid compared with the evolution of the harm.

As for beneficial effects, any monitoring should not only reduce morbidity and mortality, but should be acceptable to the patient. So weekly monitoring of liver function tests for a new pharmaceutical agent to avoid a rare hepatic adverse effect of that drug is impractical.

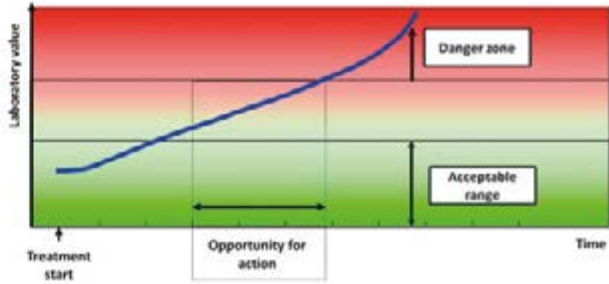


Figure 2: The window of opportunity when monitoring for adverse effects.

Navigation: ZOOM EDIT [Back] [Forward]

PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Drug Interactions

Module Overview:

In this module we will explore the potential risks and possible harms caused by pharmacodynamic and pharmacokinetic interactions in patients receiving multiple drug therapy.

We will describe the different types of drug interactions that can occur, their mechanisms and any potential clinical implications.


Knowledge of both the mechanisms of interactions and reliable information sources for drug interactions, can allow you to reduce the opportunity of occurrence and reduce the risk of patient harm.

Learning Objectives:

By the end of this module you should be able to:

- Demonstrate knowledge of potential drug-drug interactions (DDIs) mechanisms (pharmacodynamic and pharmacokinetic).
- Describe patient factors that may intensify drug-drug interactions, related to age, gender, metabolising enzyme profile (sometimes related to ethnicity), disease, diet, smoking and illicit drug use.
- Describe some of the common drug interactions seen in clinical practice and strategies for minimising their occurrence.
- Find information on potential drug interactions.
- Highlight the importance of identifying and reporting 'suspected' drug interactions and Adverse Drug Reactions (ADRs) to the Medicines and Healthcare Products Regulatory Agency (MHRA).

Drug Interactions




Session 1 ▶ Background MENU

Definition and Epidemiology

In the UK up to 1 in 20 admissions are associated with Adverse Drug Reactions (ADRs) and nearly 1 in 5 of those is associated with drug interactions.

When the effects of a drug are changed by the presence of another drug, this is defined as a **drug-drug interaction** (DDI). Interactions can lead to reduced efficacy, or an enhanced effect of the drug resulting in toxicity. Interactions may also occur when herbal medicines, nutraceuticals, diet, or where environmental agents interfere with a drug's effects.

The age and disease status of a patient may accentuate, or even reduce drug effects and interactions. Despite these concerns, it is worth remembering that not all patients will be susceptible to particular drug interactions. Studies looking at 'potential' drug-interactions within patients show higher levels of drug interactions, compared to those that examine actual, real-world drug interactions. For example a study examining drugs co-prescribed in warfarin patients found 80% of patients were taking potentially interacting drugs, a figure that is unlikely to reflect the reality in practice.



Zoom EDIT

PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Toxic Tablets

Module Overview:

Together with the Script 'Parenteral Poisons' module, this module will introduce the important aspects surrounding the prescribing, supply, administration and monitoring of so called 'dangerous drugs' that are administered via the 'oral' route.

We will discuss oral drugs that are commonly encountered in general medicine and that pose a significant risk to patients. These drugs have the potential for harm due to the risks of toxicity, significant drug interaction and adverse effects. They require close clinical monitoring and care when prescribing.


Although we will focus on the oral route of administration, where applicable much of this theory can be applied to alternative routes of administration.

Learning Objectives:

By the end of this module you should be able to:

- Describe the risks of drugs and how harm from the most dangerous drugs can be minimised.
- Discuss the general methods used to limit harm from drugs.
- Describe how the prescribing of dangerous drugs requires a concordant approach to therapy to avoid serious harm and adverse drug reactions.
- Describe the role of policy and protocol in preventing serious untoward medication errors.
- Describe the role of national patient safety authorities (e.g. the National Patient Safety Agency, NPSA) and how they contribute towards safer patient care.
- Understand the importance of monitoring drug therapy.

Toxic Tablets



Session 1 ▶ Digoxin MENU


Introduction

Digoxin is a cardiac glycoside. It increases the force of myocardial contraction and reduces conductivity within the atrioventricular node.

Digoxin is indicated for the management of heart failure and supraventricular arrhythmias. It can be given orally or intravenously (see the SCRIPT 'Cardiac Dysrhythmias' and 'Heart Failure' modules).

Digoxin has a narrow therapeutic range, therefore careful dosing is essential to avoid toxicity. Consider the patient group, concomitant therapy, and renal function when choosing to prescribe or continue digoxin therapy.

Inappropriate prescribing can lead to severe toxicity, which can be fatal.



Digoxin (digitalis) is a purified cardiac glycoside extracted from the foxglove plant, *Digitalis lanata*.

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PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Parenteral Poisons

Module Overview:

In this module we introduce the important aspects surrounding the prescribing, supply, administration and monitoring of so called 'dangerous drugs' that are administered via the parenteral route.

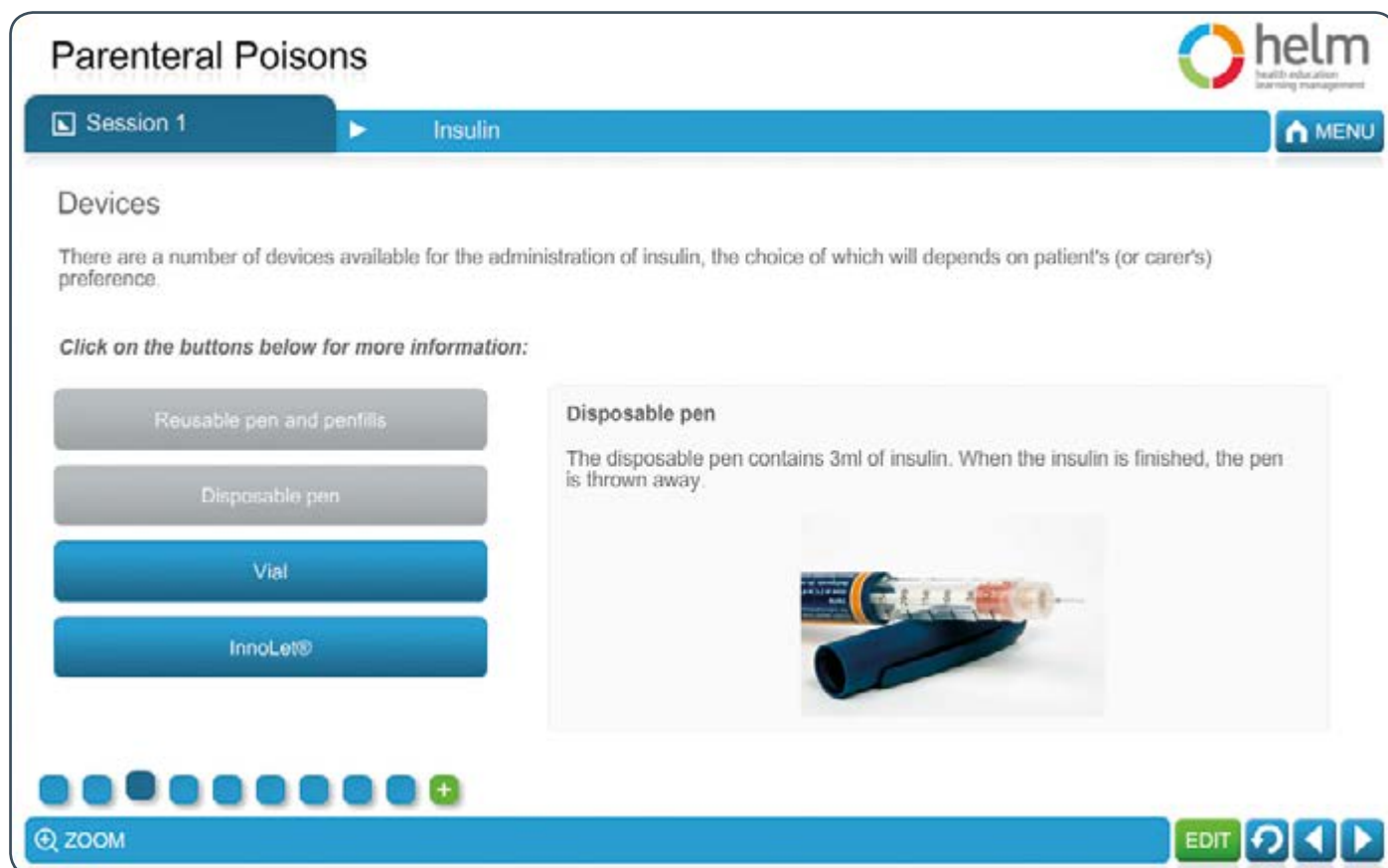
We will discuss parenteral drugs that are commonly encountered in general medicine and that pose a significant risk to patients. These drugs have the potential for harm owing to the risks of toxicity, significant drug interactions and adverse effects. They require close clinical monitoring and care when prescribing.

Although we will focus on the parenteral route of administration, where applicable much of this theory can be applied to alternative routes of administration.

Learning Objectives:

By the end of this module you should be able to:

- Describe the risks of drugs and how harm from the most dangerous drugs can be minimised.
- Discuss the general methods used to limit harm from drugs.
- Describe how the prescribing of dangerous drugs requires a concordant approach to therapy to avoid serious harm and adverse drug reactions.
- Describe the role of policy and protocol in preventing serious untoward medication errors.
- Describe the role of national patient safety authorities (e.g. the Patient Safety Domain of NHS England) and how they contribute towards safer patient care.
- Discuss the importance of monitoring drug therapy.



The screenshot shows a digital learning module interface. At the top, the title 'Parenteral Poisons' is displayed on the left, and the HELM logo is on the right. Below the title, there is a navigation bar with 'Session 1' and 'Insulin'. A 'MENU' button is visible on the right. The main content area is titled 'Devices' and contains a paragraph: 'There are a number of devices available for the administration of insulin, the choice of which will depend on patient's (or carer's) preference.' Below this, a prompt says 'Click on the buttons below for more information:'. There are five buttons: 'Reusable pen and penfills', 'Disposable pen', 'Vial', and 'InnoLet®'. The 'Disposable pen' button is highlighted in blue. To the right of this button, there is a text box titled 'Disposable pen' with the text: 'The disposable pen contains 3ml of insulin. When the insulin is finished, the pen is thrown away.' Below the text is an image of a blue and white disposable insulin pen. At the bottom of the interface, there is a 'ZOOM' button, a 'ZOOM' icon, an 'EDIT' button, and navigation arrows.

PRESCRIBING - PRESCRIBING IN SPECIAL CIRCUMSTANCES

Module Title: Perioperative Prescribing

Module Overview:


In this module we will explore the use of drugs in the perioperative period, specifically looking at issues of therapy immediately before and after operative surgery. It will consider issues such as decisions about stopping/omitting medicines prior to surgery and managing essential drug therapy.

Learning Objectives:

By the end of this module you should be able to:

- Describe the elements of the drug history that are important for preoperative patients.
- Examine a preoperative drug history, and decide which drugs to continue and/or omit.
- Define the drug classes where alternative treatments are required perioperatively.
- Explain the potential for Adverse Drug Reactions (ADRs) and adverse drug-drug interactions in the perioperative period.
- Describe the actions to be taken when a surgical patient is discharged with regards to prior chronic therapy and new take home medicines.

Perioperative Prescribing



Session 1 Nil By Mouth MENU

Direct Oral Anticoagulants (DOAC)

The DOACs are an alternative to anticoagulants such as the vitamin K antagonists (e.g. warfarin). They are licensed for several indications, including the prevention of thrombo-embolic events in atrial fibrillation and the treatment of thromboembolism.

They have a predictable anticoagulant effect with minimal or no monitoring required, fewer drug dose interactions, a short plasma half-life and potentially a safer adverse effect profile. However, concomitant usage with anti-platelet therapy will increase the risk of bleeding by 60%.

We discuss the DOACs in more detail in the *Anticoagulation* module, but have provided some key points of each below.

Dabigatran Rivaroxaban Apixaban Edoxaban

Direct thrombin inhibitor, with a half-life of 12-14 hours. It is poorly protein bound and 80% renally excreted. Contraindicated in patients with a creatinine clearance of less than 30 ml/min.

Restarting post surgery: Reinitiation should be considered on a case-by-case basis depending on the bleeding risk of the procedure, haemostasis, and the patient's renal function. This is typically 48-72 hours post-surgery.

Monitoring and reversal: Renal function should be checked at baseline and at least annually for older adults. There is no other routine monitoring required. In an actively bleeding patient, haemodialysis can filter out dabigatran. Idarucizumab is now available as an antidote for dabigatran (on specialist advice only).

ZOOM EDIT

PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Prescribing in Hepatic Dysfunction

Module Overview:

This module will explore the use of drugs in patients with liver disease, the effects of drugs on the liver, and the effect of the liver on drugs.

It will examine how to assess liver function, what drugs can cause harm to the liver, the metabolism of drugs by the liver and which drugs to avoid in chronic liver disease.

It will be of use throughout your career as a prescriber.

Learning Objectives:

By the end of this module you should be able to:

- Apply the principles of safe prescribing in patients with hepatic dysfunction.
- Discuss the effect of disease in hepatic dysfunction when prescribing.
- Describe the important adverse effects of commonly prescribed drugs on the liver.
- Describe the metabolism of drugs by the liver.
- Know the effect of some drugs on liver metabolism.
- Rationalise drug treatments in hepatic dysfunction, and make dose adjustments where necessary.
- Know where to access up-to-date and reliable information on the prescribing of drugs in hepatic dysfunction.

Prescribing in Hepatic Dysfunction

Session 2

Drug Metabolism in the Liver

MENU

First-Pass Metabolism

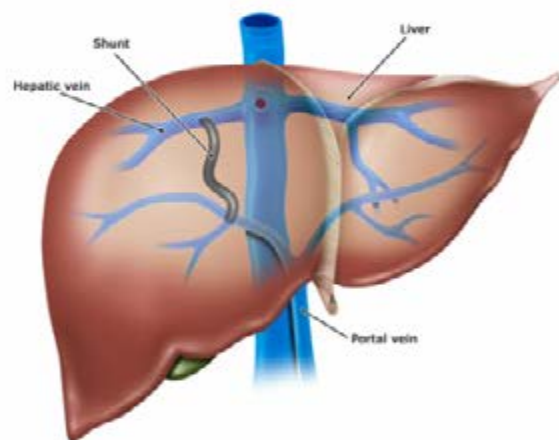
Many drugs taken orally will be subject to first-pass metabolism. They will pass through the liver and be partially or wholly metabolised before reaching the systemic circulation, reducing oral bioavailability.

If the blood flow through the liver is slowed, a drug may be subject to increased metabolism, as it may stay in the liver for longer.

However, patients with cirrhosis often develop collaterals, enabling the blood to bypass the liver, resulting in a **decrease** in first-pass metabolism.

In patients who have developed these shunts, drugs which are usually subject to extensive first-pass metabolism, will have a higher plasma concentration than usual. These drugs would normally have a low oral bioavailability, but in advanced liver disease, this can increase up to 100%. Drug concentrations can approach levels expected if the same dose was administered parenterally.

In such cases, you would need to prescribe reduced doses to avoid toxicity.



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PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Prescribing in Older Adults

Module Overview:

In this module we will discuss how older adults handle administered medicines


(pharmacokinetics) and how they react to these (pharmacodynamics) once they have been absorbed. It will help you identify problematic and beneficial polypharmacy, thus optimising the use of medicines in this patient group.

Learning Objectives:

By the end of this module you should be able to:

- Describe the processes of absorption, distribution, metabolism and excretion of drugs in the older patient.
- Explain how age-related physiological and pathological processes affect how the body reacts to drugs.
- Explain how physical, cognitive and social aspects may affect an older patient's ability to adhere to treatment.
- Discuss the factors that make older adults more at risk of developing Adverse Drug Reactions (ADRs).
- Develop strategies to reduce problems with medication in the elderly population.

Prescribing in Older Adults*



Session 1 ▶ Pharmacokinetic Changes MENU

Introduction

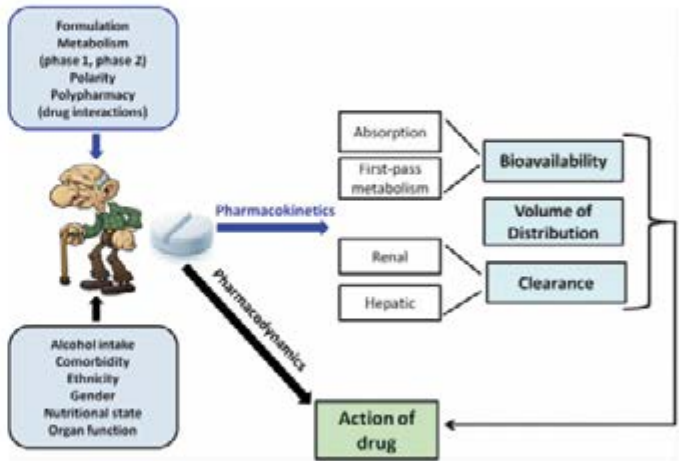
With increasing age, there is a:

- Decrease in lean body mass.
- Decrease in body water.
- Increase in body fat in relation to total body weight.
- Decrease in bone mass.

Pharmacokinetics refers to the absorption, distribution, metabolism and excretion of drugs (i.e. what the body does to the drug).

Pharmacodynamics refers to the physiological and biochemical effects a drug has on the body (i.e. what the drug does to the body).

Age-dependent changes in composition and function of the body can alter the pharmacokinetics and pharmacodynamics of a drug. This increases the risk of ADRs, and drug-drug interactions in the older adult patient. This combined with the increased number of drugs being taken, and existing comorbidities puts the older patient at risk of medicine-related problems.



The flowchart illustrates the path from drug formulation to its action in an older adult. It starts with a box for 'Formulation' (Metabolism, phase 1, phase 2; Polarity; Polypharmacy (drug interactions)) which leads to a central figure of an older man. From the man, a blue arrow labeled 'Pharmacokinetics' points to a box containing 'Absorption' and 'First-pass metabolism' (grouped as 'Bioavailability'), and 'Renal' and 'Hepatic' (grouped as 'Clearance'). A black arrow labeled 'Pharmacodynamics' points from the man to a box containing 'Alcohol intake', 'Comorbidity', 'Ethnicity', 'Gender', 'Nutritional state', and 'Organ function'. Both the 'Pharmacokinetics' and 'Pharmacodynamics' boxes have arrows pointing to a final box labeled 'Action of drug'.

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PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Prescribing in Pregnancy

Module Overview:

In this module, we will explore the use of drugs in patients who are pregnant or who may become pregnant.


The module includes the general principles of prescribing in pregnancy, the effects of drugs on the fetus, the effects of pregnancy on drug handling and introduces some key resources for determining whether a drug is safe to use. Some common conditions encountered during pregnancy are also covered.

Learning Objectives:

By the end of this module you should be able to:

- Explain how the physiological changes during pregnancy can alter the pharmacokinetics of a drug, and therefore require dose adjustment.
- Discuss the risks/benefits of prescribing in pregnancy and how this risk changes depending on the trimester.
- Describe how to minimise the risk of harm to the fetus when prescribing in pregnancy.
- Describe the key drugs (or drug groups) to avoid during pregnancy and why.
- Describe how to minimise risks in women of child bearing potential.
- Provide examples of drugs where concurrent contraceptive use is essential and why.
- Identify the main sources of information to guide prescribing in pregnant women or women of child bearing potential.

Prescribing in Pregnancy




Session 1 ▶ Drug Exposure During Pregnancy MENU

Timing of Exposure

The timing of drug exposure is important in determining whether it will cause harm and what that harm might be. Note that a drug which has caused harm in one pregnancy may not have the same effect in subsequent pregnancies. Maternal and fetal genetic factors may also influence teratogenic effects.

- During the **embryonic period** (until 17 days post-conception) any cellular damage will result in spontaneous abortion or replacement of the damaged cells with the likely result of a normal pregnancy.
- The most vulnerable time of exposure is the first trimester when the main organ systems are formed.
- The second and third trimesters are of lower risk.
- Some drugs taken near term can also have an adverse effect.

Examples of known drug teratogens may be found [here](#).



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PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Prescribing in Breastfeeding

Module Overview:

In this module, we will explore the use of drugs in patients who are breastfeeding.


The module includes the general principles of prescribing in breastfeeding patients, the effects of drugs on lactation, the possible effects that a drug may have on the breastfed infant and introduces some useful resources for establishing the safety of drug use during lactation.

Learning Objectives:

By the end of this module you should be able to:

- Discuss the risks and benefits of prescribing in patients who are breastfeeding, considering the gestational age of the infant and both infant and mother's comorbidities.
- Describe the ways in which exposure to drug therapy via breast milk may be minimised.
- List some drugs known to suppress lactation and describe how they may be used therapeutically.
- Identify the sources of advice available to guide your decision-making when prescribing for this group of patients.

Prescribing in Breastfeeding



Session 2 ▶ Seasonal Allergic Rhinitis MENU


Topical Drug Treatment

Topical agents for seasonal allergic rhinitis include:

- Sodium cromoglicate for ocular use
- Nasal decongestants such as xylometazoline
- Intranasal antihistamines (e.g. azelastine)
- Intranasal corticosteroids (e.g. fluticasone and beclometasone)

The topical corticosteroids are considered particularly effective for nasal congestion. Nasal decongestants are limited by rebound congestion if used for longer than one week.

As the amount of drug absorbed topically is minimal, all agents are considered compatible with breastfeeding.



ZOOM EDIT ↺ ↻ ▶

PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Prescribing in Paediatrics

Module Overview:

In this module we will explore the differences in drug handling across various age groups and the practicalities of dosing medicines for different ages of children. We will discuss how to avoid medication errors and the special considerations needed in the paediatric population, such as the use of unlicensed and 'off-label' preparations.


We will work through several cases and common prescribing scenarios, which should help you to consolidate the principles you have learned, as well as providing useful practical application of knowledge.

Learning Objectives:

By the end of this module you should be able to:

- Describe how children and neonates handle drugs differently from adults and how this influences prescribing.
- Explain what is meant by unlicensed and off-label prescribing, and provide example of this in paediatrics.
- Discuss why children are more vulnerable to medication errors, and how to avoid them.
- Demonstrate the different ways a dose may need to be calculated, including those based on body weight and Body Surface Area (BSA).
- Calculate maintenance and rehydration fluid requirements for children of all weights and ages.
- Prescribe medicines for children and neonates to manage common complaints and presentations, such as pain.

Paediatric Prescribing



Session 2 ▶ Common Paediatric Prescribing Scenarios MENU

Immunisations

You are working in your GP placement and a 4-month-old baby is brought in by his father for his **third** set of immunisations.

Which **ONE** of the following combinations should you give?

- DTaP/IPV(polio)/Hib + PCV (pneumococcal, Prevanar 13®) + meningitis B
- DTaP/IPV(polio)/Hib + meningitis C
- DTaP + Pneumococcal booster + meningitis B
- DTaP/IPV(polio)/Hib + PCV (pneumococcal, Prevanar 13®) + meningitis C
- Measles, mumps + rubella

Yes, that's right.

DTaP/IPV(polio)/Hib + PCV (pneumococcal, Prevanar 13®) + meningitis B

- The '[Green Book](#)' contains information on the vaccination of both children and adults.
- It is important to check the baby has had no previous reactions to immunisations, is well, and you are aware of any prescribed medicines
- There have been significant changes to the child immunisation schedule over the past few years, for example, the introduction of the rotavirus vaccine, influenza nasal spray and Human Papilloma virus Vaccine (HPV) vaccine.
- In September 2015, the meningococcal B vaccine was also introduced into the primary vaccine schedule. The vaccine is recommended for babies aged 2 months, followed by a second dose at 4 months and a booster at 12 months.
- It is important to check the vaccination schedule as it frequently changes.

ZOOM EDIT

PRESCRIBING - MANAGING THE RISKS OF PRESCRIBING

Module Title: Dementia Friendly Prescribing

Module Overview:


In this module, we will discuss the different types of dementia, their diagnosis and management. As a prescribing practitioner completing this module, you will have the knowledge and skills needed to safely assess, manage and refer any patient with dementia seen in a secondary care setting.

Learning Objectives:

By the end of this module you should be able to:

- Describe the common presentations and causes of dementia.
- Describe how to assess a patient for suspected dementia, and know which investigations are relevant.
- Identify which patients require referral to specialist services, and what these services will offer.
- Describe rational treatment choices to slow the progression of dementia, including NICE guidance on when these treatments should be prescribed.
- Choose suitable treatments for the behavioural and psychological symptoms of dementia (BPSD), including assessing the risk of the harm and benefit of antipsychotic use.

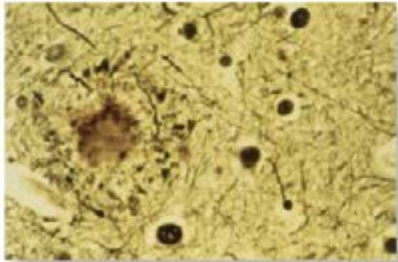
Dementia Friendly Prescribing



Session 1 ▶ Types of Dementia MENU

Alzheimer's Disease

Alzheimer's Disease (AD) is the most common type of dementia, causing at least half of all cases. Neurotoxicity is thought to be caused by extracellular amyloid plaques and intracellular neurofibrillary tangles. Neuroimaging will reveal no space occupying lesion, and may show generalised cortical atrophy and (highly suggestive) thinning of medial temporal lobe and hippocampus.



Light micrograph of human brain tissue in Alzheimer's disease, showing a senile plaque (circular lesion at left), a characteristic histological feature of the disease

- Neuropsychological assessment will typically show diffuse deficits in short-term memory, impairment of language and, as the condition progresses, impairment of judgment, visuospatial ability and in sustaining attention.
- Onset of the condition is typically insidious and delays to diagnosis are therefore common.
- Prognosis is between 5-10 years from diagnosis to death.
- On average, a family history doubles the risk of someone developing Alzheimer's over their lifetime.

There is no reliable biomarker that is widely available to predict the likelihood of AD developing (although emerging evidence may challenge this view). 'At risk' groups include those with Mild Cognitive Impairment (MCI), which refers to patients with a severe cognitive deficit (usually amnesic type) but no clear evidence for dementia, and preserved function. Patients with MCI have a 10-15% risk of developing AD each year.

As AD is so common, even atypical presentations such as onset of dementia before the age of 65-years are still likely to be due to AD; **never exclude it from your differential diagnosis.**

ZOOM EDIT

PRESCRIBING - THERAPEUTIC GROUPS

Module Title: Respiratory Medicine

Module Overview:

In this module we will discuss the management of asthma and COPD, as well as the issues surrounding the prescribing of oxygen and devices for inhaled drug therapy.


It will be of particular value to prescribers commencing or undertaking a medical, Emergency Department, or general practice rotation.

Learning Objectives:

By the end of this module you should be able to:

- Prescribe oxygen, safely in both the acute and long-term settings.
- Counsel patients about the options available for smoking cessation and prescribe appropriate nicotine replacement therapy.
- Describe the different devices available for delivering inhaled therapy, and be able to choose the most suitable device for your patient.
- Manage both acute and chronic COPD and asthma.
- Choose appropriate management strategies for patients with common respiratory infections.


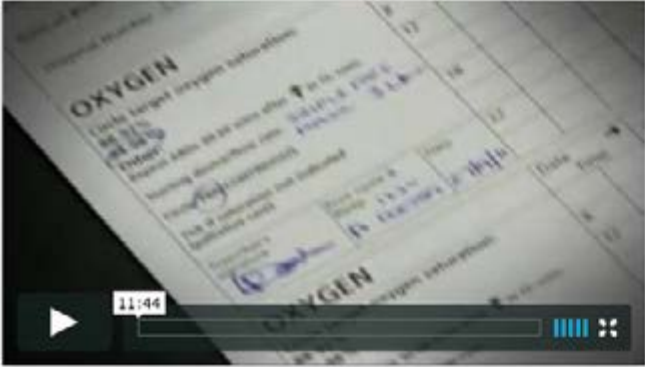
Respiratory Medicine



Session 1 ▶ Oxygen MENU

Clinical Skills Video: Administration

Click play to watch the video



The Ron Grimley Undergraduate Centre (RGUC) is a clinical teaching academy based at The Dudley Group NHS Foundation Trust. Tomorrow's Clinicians is a series of films produced in-house by RGUC, with the aim of enhancing undergraduate and postgraduate medical education. A wide range of clinical skills procedures are covered in more than 30 other films in the series.

98 ZOOM EDIT

Module Overview:

In this module we will consider the use of medicines in the management of common psychiatric disorders occurring in conjunction with a physical illness or presenting with physical symptoms. We will also address the management of severe behavioural disturbances in a person presenting to an Emergency Department.

We aim to provide the knowledge required to manage common mental illnesses and understand how the Mental Health and Mental Capacity Acts impact on the prescribing and administration of medicines.


Note that some medicines are considered under more than one indication in this module. To avoid repetition it is important to be aware that adverse effects, discontinuation symptoms, interactions and suicide risk apply regardless of what the medicine is prescribed for.

Learning Objectives:

By the end of this module you should be able to:

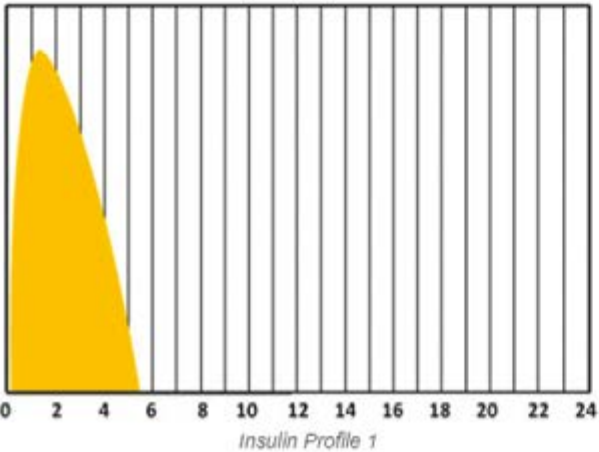
- Assess and treat depression in a person suffering from a chronic physical illness.
- Explain the place in therapy, major adverse effects and interactions of key antidepressants.
- Discuss what the available options are for the treatment of anxiety.
- Discuss what the most effective interventions are for insomnia.
- Describe the aims of Rapid Tranquilisation (RT) together with the various treatment options available.
- Offer your patient choice; explain the risks of abrupt antidepressant withdrawal and benzodiazepine dependence.
- Emphasise the importance of good adherence in preventing relapse, together with the need for physical health monitoring where appropriate in severe mental illness.
- Have an appreciation of clozapine for Treatment Resistant Schizophrenia (TRS).

Diabetes



Session 1 Prescribing Insulin Safely MENU

Insulin Profile Activity 1 (A)



Onset: 10-20 minutes
Maximum effect: 1-3 hours
Duration: 3-5 hours

Please pick the summary profile for this insulin.

- Short-acting
- Rapid-acting analogues
- Intermediate-acting
- Long-acting

Yes, that's right.

- These have a faster onset and shorter duration of action compared to short-acting insulin.
- Systemic absorption is quick after subcutaneous injection. The shorter duration of action can reduce the risk of hypoglycaemia between meals. Longer-acting insulin is usually needed to provide cover overnight.
- Examples include insulin lispro (Humalog®), aspart (NovoRapid®) and glulisine (Apidra®).

ZOOM EDIT

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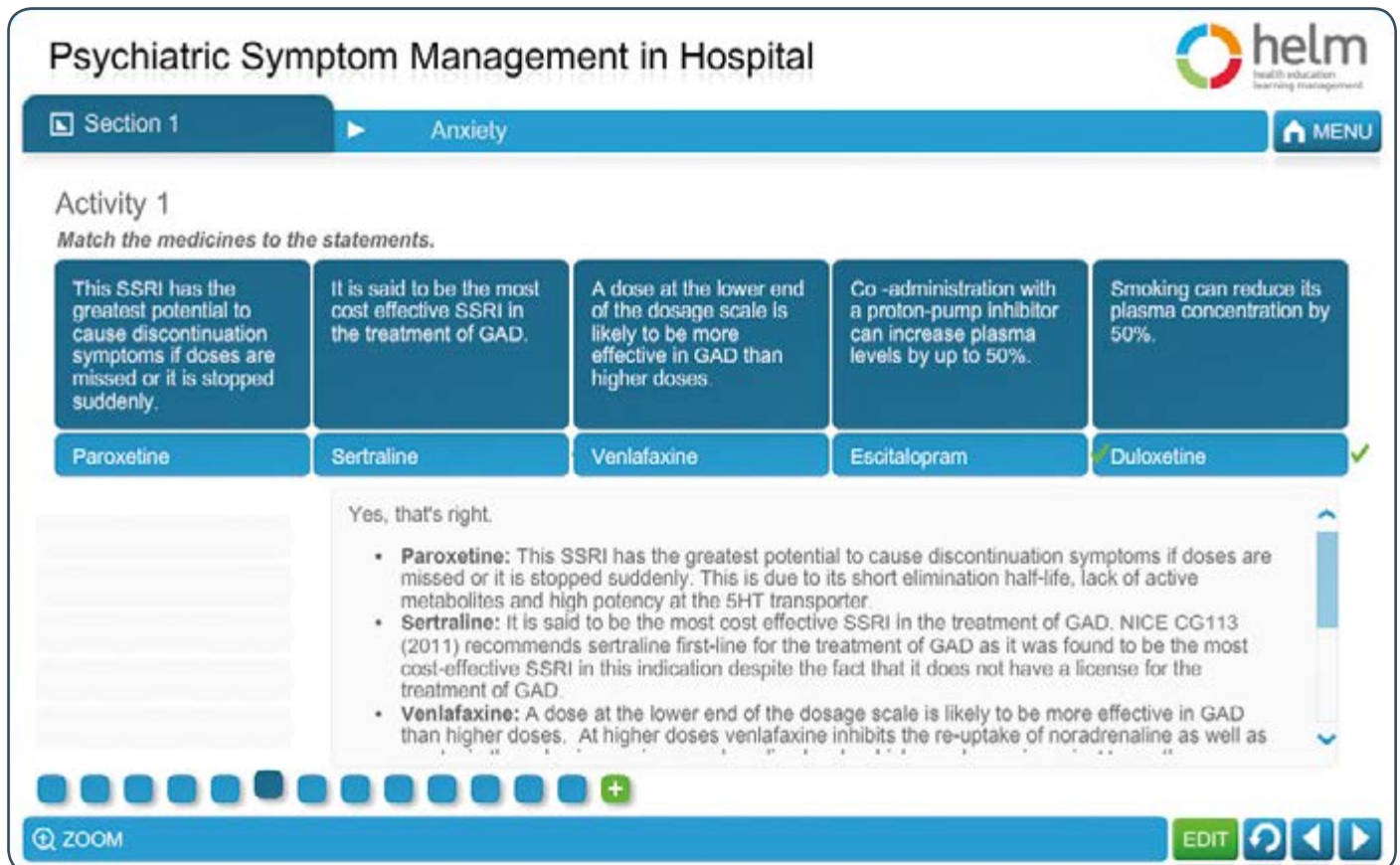
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Note that some medicines are considered under more than one indication in this module. To avoid repetition it is important to be aware that adverse effects, discontinuation symptoms, interactions and suicide risk apply regardless of what the medicine is prescribed for.

Learning Objectives:

By the end of this module you should be able to:

- Assess and treat depression in a person suffering from a chronic physical illness.
- Explain the place in therapy, major adverse effects and interactions of key antidepressants.
- Discuss what the available options are for the treatment of anxiety.
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- Describe the aims of Rapid Tranquilisation (RT) together with the various treatment options available.
- Offer your patient choice; explain the risks of abrupt antidepressant withdrawal and benzodiazepine dependence.
- Emphasise the importance of good adherence in preventing relapse, together with the need for physical health monitoring where appropriate in severe mental illness.
- Have an appreciation of clozapine for Treatment Resistant Schizophrenia (TRS).



The screenshot shows a digital learning module titled "Psychiatric Symptom Management in Hospital". The interface includes a navigation bar with "Section 1" and "Anxiety", and a "MENU" button. The main content area is titled "Activity 1" with the instruction "Match the medicines to the statements." Below this, there are five blue boxes containing statements and five corresponding medicine names in a row below them. The medicine "Duloxetine" is marked with a green checkmark, indicating it is the correct match for the statement "Smoking can reduce its plasma concentration by 50%". A feedback box below the activity says "Yes, that's right." and lists three bullet points: Paroxetine (SSRI with greatest potential for discontinuation symptoms), Sertraline (most cost-effective SSRI for GAD), and Venlafaxine (more effective at lower doses). The interface also features a "ZOOM" button, an "EDIT" button, and navigation arrows.

Psychiatric Symptom Management in Hospital

Section 1 | Anxiety | MENU

Activity 1

Match the medicines to the statements.

This SSRI has the greatest potential to cause discontinuation symptoms if doses are missed or it is stopped suddenly.	It is said to be the most cost effective SSRI in the treatment of GAD.	A dose at the lower end of the dosage scale is likely to be more effective in GAD than higher doses.	Co-administration with a proton-pump inhibitor can increase plasma levels by up to 50%.	Smoking can reduce its plasma concentration by 50%.
Paroxetine	Sertraline	Venlafaxine	Escitalopram	✓ Duloxetine

Yes, that's right.

- **Paroxetine:** This SSRI has the greatest potential to cause discontinuation symptoms if doses are missed or it is stopped suddenly. This is due to its short elimination half-life, lack of active metabolites and high potency at the 5HT transporter.
- **Sertraline:** It is said to be the most cost effective SSRI in the treatment of GAD. NICE CG113 (2011) recommends sertraline first-line for the treatment of GAD as it was found to be the most cost-effective SSRI in this indication despite the fact that it does not have a license for the treatment of GAD.
- **Venlafaxine:** A dose at the lower end of the dosage scale is likely to be more effective in GAD than higher doses. At higher doses venlafaxine inhibits the re-uptake of noradrenaline as well as

ZOOM | EDIT | Navigation arrows

Module Overview:

In this module we will discuss the prescribing of oral and parenteral anticoagulation therapy.

We will consider the indications and contraindications to treatment, the recommended dosing regimens, and monitoring requirements.

With the introduction of Direct Oral Anticoagulants (DOACs) in 2008, there has been a rapid change in prescribing practice for oral anticoagulation. This highlights the importance of keeping up-to-date to minimise the risk of harm to your patients.

Learning Objectives:

By the end of this module you should be able to:

- Describe the basic pharmacology of Vitamin K Antagonists (VKAs), Direct Oral Anticoagulants (DOACs), unfractionated heparin and Low Molecular Weight Heparins (LMWHs).
- Discuss the indications for treatment, the recommended dosing regimens and duration of treatment for each.
- List the cautions and contraindications of therapy and appreciate the need to balance benefit with the risk of harm.
- Discuss the potential complications of therapy.
- Describe the monitoring requirements.
- List some common drug-drug interactions.
- Counsel patients prescribed an anticoagulant in order to support adherence and minimise the risk of harm.
- Describe role of the anticoagulant clinic and how information should be communicated at transitions of care.

Anticoagulation

Session 1

Vitamin K Antagonists

MENU

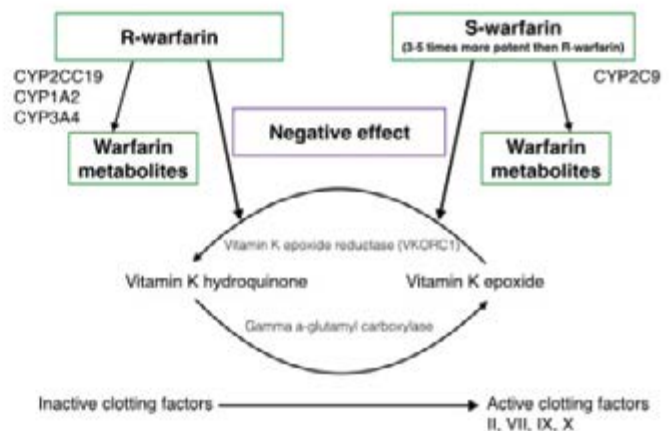
Mechanism of Action

Warfarin, phenindione and acenocoumarol are all coumarins. They inhibit vitamin K epoxide reductase in the liver. This enzyme recycles vitamin K which is required for gamma-carboxylation of glutamic acid residues; a necessary step in the activation of certain coagulation proteins (factors II, VII, IX and X, protein C and S). This explains why vitamin K in excess is a natural antidote to the effect of coumarins

Warfarin is metabolised in the liver by Cytochrome P450 enzymes. This explains why many drugs interact with warfarin. CYP1A1, CYP1A2, and CYP3A4 metabolise the R-enantiomer and CYP2C9 metabolises the more potent S-enantiomer of warfarin.

Polymorphisms within Cytochrome P450 enzyme subtypes and within the vitamin K epoxide reductase gene explain some of the observed variation in warfarin doses between individuals.

The anticoagulant effect of coumarins like warfarin can be measured in plasma or capillary blood samples using the International Normalised Ratio (INR).



Source: Pharmacogenetics of warfarin - is testing clinically indicated. Australian Prescriber 2009; 32:76-80.



ZOOM

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Module Overview:

In this module we will show you how to prescribe safely and appropriately for commonly encountered infections in secondary care. We will discuss how to assess the severity of infection so you can initiate appropriate management.

This module will be relevant throughout your career as a prescriber.

Learning Objectives:

By the end of this module you should be able to:

- Select the most appropriate drug, dose, route and duration of treatment for commonly encountered infections in secondary care.
- Describe which antibacterials are contraindicated in patients who are pregnant or breastfeeding, or who have hepatic or renal dysfunction.
- Recall the common drug-drug interactions encountered when prescribing in infection.
- Explain when to consult senior clinical advice (e.g. Microbiology).
- Explain how and why to monitor and review treatment.
- Describe where to look for information regarding the safe and effective management of infection, both locally and nationally.

Infection in Secondary Care



Session 1 Skin MENU

Cellulitis (1)

Cellulitis is an infection of the dermis and subcutaneous tissue, causing erythema of the skin. In the majority of cases the infection is due to the patient's own skin flora breaching the protective barrier of the skin (e.g. staphylococci and streptococci). You should be aware of any previous microbiology, especially colonisation with Multi-Drug Resistant (MDR) organisms as this may affect your management plan.

When you treat a patient for cellulitis:

- Assess the severity of infection
 - Is the cellulitis spreading rapidly?
 - Is there an associated abscess(es)?
 - Is necrotising fasciitis a possibility?
 - Are there signs of shock indicating possible toxin production?
 - If severe, the patient needs immediate treatment and escalation to a senior member of your team and Critical Outreach/ICU
- Exclude the possibility of having or developing a co-existent Deep Vein Thrombosis (DVT) – consider prophylaxis
- Determine if the patient is suitable for antibacterials in the home



Swelling and inflammation on the lower leg (calf) due to cellulitis

ZOOM EDIT

Module Overview:

In this module, we will provide an overview of the management of acute and chronic pain. Pharmacological treatment with analgesics will be considered together with non-pharmacological approaches. Owing to the complex nature of pain some patients will require specialist input. It is important you know when to refer a patient, or when to contact the pain team for specialist advice.

Learning Objectives:

By the end of this module you should be able to:

- Describe how the WHO Pain ladder assists in rational prescribing of analgesic therapy for both acute and chronic pain.
- Explain the risks associated with paracetamol and NSAIDs, and how these may be minimised.
- Identify weak opioid analgesics and when they are appropriate for use.
- Identify strong opioid analgesics, and how to minimise the risks when switching between different opioid analgesics and titrating doses to meet individual patient requirements.
- Describe the indications and cautions of Patient Controlled Analgesia (PCA).
- Recall the stepwise management of neuropathic pain, and understand when a referral to the Specialist Pain Team is necessary.
- Describe the use of local anaesthetics in secondary care setting, and how to recognise and manage toxicity.
- Identify patients with complex analgesic requirements where input may be required from specialist teams.

Management of Pain



Session 1 ▶ Pain MENU

Types of Pain

Pain may arise in two ways:

1. As a response to a pathophysiologic process occurring within the tissues (e.g. inflammation)
2. In response to a pathologic process occurring along and within the nervous system pain pathways.

In the first instance, the pain signal originates from intact primary afferent nerves that signal noxious events, or nociceptors. This type of pain has been called **nociceptive pain**. Nociceptors can be sensitised by release of algogenic agents (e.g. prostaglandins, bradykinin, serotonin, adenosine, and cytokines).

In the second instance, the pain signal is generated ectopically and often in the absence of ongoing noxious events by pathologic processes in the peripheral or central nervous system. This pain is termed **neuropathic pain**.



ZOOM EDIT ↶ ▶

Module Overview:


In this module, we will discuss the pharmacological management of heart failure. With reference to national guidelines, we will consider the cautions and contraindications of treatment, the adverse effects of treatments and how you can minimise the risk of harm to your patients.

Learning Objectives:

By the end of this module you should be able to:

- With reference to national and international guidelines, discuss the pharmacological management of heart failure.
- Discuss how a patient's pharmacological management can be optimised to achieve both symptomatic and prognostic benefits and how these treatments can be monitored to reduce the risk of adverse effects.
- Describe the cautions and contraindications of treatment regimens in patients with comorbidities.
- Discuss the increased potential for drug-drug interactions in this patient group, and recall some of the common interactions.

Heart Failure



Session 2 ▶ Safe Prescribing MENU


Patient Education

Counsel patients on the chronicity of the condition and the need for long-term medication, as well as lifestyle changes and behavioural modifications to control symptoms and improve prognosis.

Lifestyle advice should include education on:

- Control of sodium and potassium intake: Patients should be advised to avoid sodium intake of more than 6 g per day and to avoid low salt substitutes because they have high potassium content.
- Regulation of fluid intake to try and avoid fluid overload, and how to recognise signs of fluid overload (daily weights).
- Exercise rehabilitation (for the stable patient), with the aim of improving exercise tolerance.
- Smoking cessation.
- Cutting back on alcohol (or abstaining completely in the case of alcohol-related cardiomyopathy).
- The importance of receiving the annual influenza vaccine.

Patients with good symptom control should be allowed to drive but those with significant LV dysfunction (LVEF less than 40%) are not allowed to hold a Group 2 (HGV) license. Air travel should be possible for those with well controlled symptoms.



ZOOM EDIT ↺ ↻ 🏠

Module Overview:


In this module we will explore the pharmacological management of both epilepsy and status epilepticus. The factors affecting the choice of antiepileptic drug (AED) treatment will be considered, along with how the risk of harm from such treatments can be minimised.

Learning Objectives:

By the end of this module you should be able to:

- Discuss the aims and objectives of drug treatment in the long-term management of epilepsy.
- Discuss the factors governing the choice of AED treatment including the adverse effects associated with them.
- Describe the management options of epilepsy in women of child-bearing potential and during pregnancy.
- Describe some of the common drug-drug interactions associated with AEDs.
- Discuss the role of Therapeutic Drug Monitoring (TDM) for AEDs.
- Describe the pharmacological management of status epilepticus in secondary care, and the monitoring requirements following the administration of drug treatment.

Epilepsy



Section 1 ▶ Background MENU

History

400 B.C.

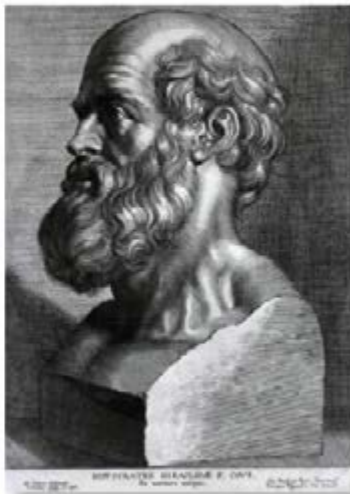
Epilepsy has been known since the dawn of time. The Greek physician Hippocrates writes the first book on epilepsy, 'On the Sacred Disease'. Refuting the idea that epilepsy is a curse or a prophetic power, Hippocrates proves the truth: it's a brain disorder.

"It is thus with regard to the disease called Sacred: it appears to me to be nowise more divine nor more sacred than other diseases, but has a natural cause like other affections. . ."

70 A.D.

In the Gospel According to Mark (9:14-29), Jesus Christ casts out a devil from a young man with epilepsy: "Teacher, I brought you my son, who is possessed by a spirit that has robbed him of speech. Whenever it seizes him, it throws him to the ground. He foams at the mouth, gnashes his teeth, and becomes rigid. I asked your disciples to drive the spirit out, but they could not." (NIV)

Throughout recorded medical history, until the present day, it has been recognised that epilepsy carries a social stigma, which is worse in the developing world. There is evidence that the level of stigma is falling, but it continues to be perceived by many with the condition.



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ZOOM EDIT ↶ ↷


Module Overview:

In this module we will explore the main issues surrounding the misuse of drugs, both legal and illegal. We will discuss both the acute presentation of drug intoxication and withdrawal, and the chronic problems associated with drug and alcohol dependence.

Learning Objectives:

- By the end of this module you should be able to:
- List common legal and illegal substances of abuse.
 - Discuss the impact of drug abuse on mental and physical health.
 - Describe the pharmacological mechanisms of dependence and withdrawal.
 - List both the psychological and physical signs and symptoms of dependence and withdrawal.
 - Discuss pharmacological interventions for the management of substance misuse.
 - Discuss non-pharmacological interventions for the management of substance misuse.
 - Refer the patient for appropriate support and follow-up.

Drugs of Misuse




Section 1
Illicit Drugs
MENU

Stimulant Drugs

Stimulant drugs such as cocaine, amphetamine, ecstasy (3,4-methylenedioxymethamphetamine, MDMA) and cathinones have similar pharmacological properties. They are known as indirectly acting sympathomimetic drugs since they mimic the effects of neurotransmitters of the sympathetic nervous system. They stimulate the action of three monoamines - dopamine, noradrenaline and serotonin (5-HT) - by causing release of the neurotransmitter or blocking re-uptake.

Drug	Street names
Cocaine hydrochloride	Coke, charlie, blow, snow
Freebase cocaine	Crack, base
Amphetamine	Speed, whizz
Methamphetamine	Crystal meth, ice
4-methylmethcathinone	Mephedrone, meow-meow, M-CAT
3,4-methylenedioxy-methamphetamine (MDMA)	Ecstasy, E, pills



These sympathomimetic properties are responsible for the physical and mental effects seen with these drugs, which include: increased alertness and self confidence, talkativeness, loss of desire to sleep or eat, euphoria, and extrovert behaviour.

Table 2: Street names of common stimulant drugs of misuse

ZOOM
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Module Overview:

In this module we will discuss evidence-based medicine and how it should be used to help you make rational therapeutic decisions.

Evidence-based medicine is about how information - for example, from clinical trials - is interpreted and used to ensure your patients receive the most appropriate and effective treatment.


Evidence-based medicine can improve patient outcomes, reduce variations in care and ensure NHS resources are managed effectively.

Learning Objectives:

By the end of this module you should be able to:

- Describe the need for evidence-based practice.
- Explain how it can improve patient safety and outcomes.
- Describe the principles of evidence-based medicine and levels of evidence.
- Explain the difference between Relative Risk Reduction (RRR) and Absolute Risk Reduction (ARR).
- Define and be able to calculate the Number Needed to Treat (NNT).
- Determine if a trial is statistically significant, using P-values and confidence intervals.
- Describe the principles of critical appraisal, and the tools required to review industry advertising critically.
- Seek appropriate evidence and interpret it effectively to aid prescribing decisions.
- Describe how evidence-based medicine is crucial in the development of healthcare policies, protocols and Trust formularies.
- Describe the role of clinical audit and the stages involved.

Rational Drug Choice




Session 1 ▶ The Pharmaceutical Industry MENU

The Impact of the Industry

In Great Britain, the pharmaceutical industry spends nearly £4 billion a year, or more than £10 million a day on research and development [The Association of the British Pharmaceutical Industry (ABPI)]. New drugs undoubtedly improve health care. The discovery of insulin in 1921 by Banting and Best at the University of Toronto is a good example of this. It was Lilly, and then Novo Nordisk, that rapidly commercialised the production of insulin, without which it would not have been possible to produce sufficient quantities needed to treat people dying from Type 1 diabetes within weeks of diagnosis.

During your career as a prescriber, representatives from the pharmaceutical industry will be keen to create interest and persuade you to use their products. Using discussions with the industry from an educational perspective has its advantages. It is useful to know what drugs or formulations are 'new' to the market.



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Module Overview:


In this module you will be presented with a number of case vignettes that contain ethical dilemmas surrounding prescribing and consent for treatment in adults. Each case will ask you to consider your actions to resolve the situation, and provide feedback on how they should be approached.

Learning Objectives:

By the end of this module you should be able to:

- Discuss the principles and processes of gaining consent for adult patients.
- Describe the process of assessing capacity and how it is affected by the Mental Capacity Act 2005.
- Understand how the principles of consent may differ depending on the circumstances.
- Recall the GMC guidance on ethical issues and consent.

Ethics and Consent




Session 2 Professional MENU

Case Vignette 1(A)

Whilst getting ready to attend the consultant ward round, you receive a phone call on your mobile phone from your colleague Katie, a specialist trainee. She asks if it would be possible to bring her an antiemetic from the ward as she feels nauseated following the doctor's mess party last night. In her current state she does not feel well enough to attend the ward round but thinks some metoclopramide from the ward drug trolley would probably help. You don't know many of the new patients on the ward as you have just returned from annual leave but know that Katie reviewed them yesterday and her input on the ward round would be useful. Katie lives on-site in staff accommodation, only a few minutes walk from the ward.

On the next page you will be asked the question 'What is the best way to respond to Katie's request?'



Zoom EDIT

Module Overview:

Patient safety incidents provide a warning that a system may have fatal flaws. In this module we will discuss how the principles of Root Cause Analysis (RCA) are used both locally and nationally to identify the causes of incidents, and to implement changes to improve patient safety.

Learning Objectives:

By the end of this module you should be able to:

- Understand the importance of 'being open' when a patient safety incident occurs.
- Discuss the tools used in the Root Cause Analysis (RCA) of incidents.
- Understand how the tools for RCA help identify ways of improving patient safety.

Root Cause Analysis

Session 1 | Dealing with Patient Safety Incidents | MENU

4. Investigate and look for the cause

So far we have determined that blaming an individual might appear the easier option, but in the long-term does not protect future patients from similar errors. If the event is ignored, possibly because the patient was not harmed, again there will be no learning. Never ignore patient safety incidents; they provide a warning that the system may have fatal flaws. Being open is a system in place in healthcare organisations to ensure the truth can be found. This section considers how the truth might be understood and presented.

When a patient safety incident occurs, it is very, very rarely an intentional and malicious act by a healthcare practitioner. James Reason describes the basic error types. He divides them by whether the action was intentional or if something else was intended to happen (see Figure 1).

You will now be presented with a series of cases, which have been abstracted from actual error reports to the NPSA.

```
graph LR; UA[Unsafe Acts] --> IA[Intended Actions]; UA --> UA2[Unintended Actions]; IA --> V[Violations]; IA --> M[Mistakes]; V --> VR[Routine Reasoned Reckless & Malicious]; M --> RK[Rule & Knowledge based errors]; UA2 --> L[Lapses]; UA2 --> S[Slips]; L --> SK[Skill based errors Memory failures]; S --> SK2[Skill based errors Attentional failures];
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Figure 1: Basic error types

110 ZOOM EDIT

PRESCRIBING - ADVANCED PRESCRIBING

Module Title: Prescribing at the Interface & Team Prescribing

Module Overview:


In this module, we will discuss the importance of communication within the healthcare sector, and how this contributes to the effective management and monitoring of patient care. In an ever changing healthcare system, we will discuss the role of Non-Medical Prescribers (NMPs) and Effective Shared Care Agreements (ESCA).

Learning Objectives:

By the end of this module you should be able to:

- Explain the aims and objectives of Effective Shared Care Agreements and when and why they may be necessary.
- Describe the role of the Independent Prescriber (IP) and how their role relates to that of a medical practitioner.
- Describe the role of the Supplementary Prescriber (SP) and how their role relates to that of a medical practitioner.
- Describe the function of Patient Group Directions (PGDs).

Prescribing at the Interface & Team Prescribing



Session 1 ▶ Interface Prescribing MENU

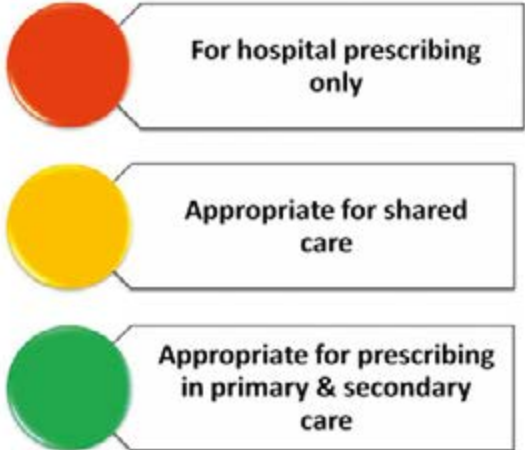
Why do we have formularies?

NHS Trusts and Clinical Commissioning Groups (CCGs) will more often than not adopt a formulary. Formularies:

1. Restrict the range of drugs allowing increased familiarity with a small range of products.
2. Encourage evidenced-based prescribing.
3. Encourage cost effective prescribing.
4. Reduce use of untried medicines gaining widespread use.

It is becoming common place for regions, or areas within a region, to have a uniform formulary. This eliminates many of the problems encountered with non-formulary drugs when patients move around the region.

The Traffic light system below can define the responsibility for prescribing between secondary and primary care. Drugs will either be **recommended** and so receive a traffic light as shown below; or **not recommended** (non-formulary) and are therefore not suitable for prescribing in secondary or primary care.



The diagram shows three colored circles with corresponding text boxes:

- Red circle:** For hospital prescribing only
- Yellow circle:** Appropriate for shared care
- Green circle:** Appropriate for prescribing in primary & secondary care

ZOOM EDIT ↶ ↷ 🏠

Module Title: Managing Complications of Anticancer Therapy

Module Overview:

In this module, we will highlight the basic principles of Systemic Anticancer Therapy (SACT), the appropriate management of patients presenting with complications of treatment, as well as those caused by the underlying malignancy.

We will explore modern systemic anticancer therapy and the importance of safe, rational prescribing.


This module will be of particular value to doctors currently in or about to undertake their haematology/oncology rotation. It may also supplement the training of non-medical prescribers who will be working in this field, or for prescribers working in areas that deal with the emergency treatment of chemotherapy-induced toxicity.

Learning Objectives:

By the end of this module you should be able to:

- Describe the differences between the main groups of Systemic Anticancer Therapies (SACT).
- Explain the aims of SACT - maintaining the balance between maximised effect and minimised risk.
- Identify and formulate initial treatment plans for common oncological emergencies.
- Identify adverse effects of SACT and formulate simple treatment plans to deal with these complications.
- Know that only those practitioners who are identified on the local intrathecal register may be involved in any process surrounding the prescribing, supply and administration of intrathecal chemotherapy.

Managing Complications of Anticancer Therapy



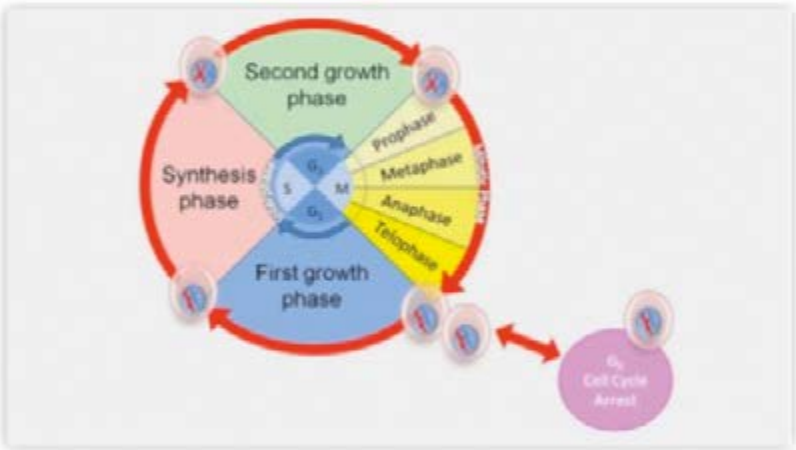
Session 1 ▶ Systemic Anticancer Therapy MENU

Cytotoxic Drugs Video

The main groups of cytotoxic chemotherapy act at various points during the cell cycle to exert their effects. The principal effect of administering these drugs is to cause cell death and reduce or reverse tumour growth.

[Click play to watch the video](#)

[Action of Cytotoxic Agents Audio Script](#)



Zoom EDIT

Module Overview:

In this module we will explore the prescribing issues in caring for patients with advanced disease and those that are dying.

We will discuss the management of pain in providing palliative care to patients so you can prescribe opioids safely and effectively. The management of nausea and vomiting, and those symptoms that commonly arise in the last days of a patient's life will also be discussed. We will also focus on the importance of shared decision-making with the patient and their family and within the multidisciplinary team.

Learning Objectives:

By the end of this module you should be able to:

- Describe the principles of palliative care.
- Discuss the importance of shared decision-making in providing palliative care to patients, taking into account the priorities of the individual and their close family.
- Describe the principles of pain management in palliative care, including breakthrough pain.
- Know how to commence morphine for a patient in chronic pain and how to alter the dose safely.
- Appreciate how a change in the route of administration can affect dose, and identify when dose conversion is necessary.
- Understand when to give a drug by continuous subcutaneous infusion using a syringe driver.
- Explain which drugs can be given by subcutaneous infusion using a syringe driver, and where to find information about compatibilities.
- Describe the pharmacological options available to provide comfort and well-being for the symptomatic relief of nausea and vomiting, terminal restlessness and agitation, respiratory secretions, and breathlessness.

Palliative and End-of-Life Care

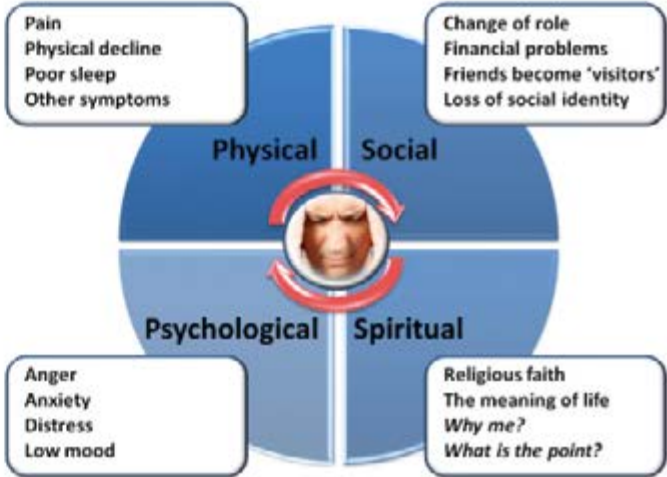
Session 1 | Pain Management in Advanced Disease

The Multi-dimensional Nature of Pain (1)

Think about the last time you had a really severe pain. Think of words to describe what IT felt like. Now think of what YOU felt like. Pain is not just a physical insult and sensation, it has an emotional component.

Most of the pain we experience is acute and has a clearly identifiable cause, and we know it will get better. Pain related to cancer (or other chronic life-limiting illness) can be much more concerning. The patient may be asking themselves: *Does it mean that my condition is getting worse, or spreading? Does it mean the medication will not work?*

It is important you understand the impact of the pain on the patient, because it will influence how you manage the pain.



helm health education learning management

ZOOM EDIT

Module Overview:

Your role will have a job description. This tells you what your main duties and responsibilities are and who you report to. Ask your employer for a copy if you do not have it. You should know what is expected of you but also what is not included in your role.

It will be almost impossible for a job description to list every task you will do but it should give you a good overall picture of your role.

The kinds of duties that might be in your job description are:


- providing care and support, working in a person-centred way, communicating well,
- building relationships and promoting equality and diversity
- working as part of a team, being a supportive team member and developing your
- skills to improve your work
- contributing to activities in a safe way, keeping and filing clear records, keeping to
- regulations, following the agreed way of working
- respecting confidentiality by not discussing any personal information on
- individuals or staff with unauthorised people, and storing records securely.

Learning Objectives:

By the end of this module you should be able to:

- Understand your own role.
- Be able to work in ways that have been agreed with your employer.
- Understand working relationships in health and social care.
- Be able to work in partnership with others.

Understand Your Role



Learning Session Overview MENU


Introduction

Your role will have a job description. This tells you what your main duties and responsibilities are and who you report to. Ask your employer for a copy if you do not have it. You should know what is expected of you but also what is not included in your role.

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- contributing to activities in a safe way, keeping and filing clear records, keeping to
- regulations, following the agreed way of working
- respecting confidentiality by not discussing any personal information on
- individuals or staff with unauthorised people, and storing records securely.



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CARE CERTIFICATE

Module Title: Standard 2: Your Personal Development

Module Overview:

Personal development happens throughout your life. At work, it starts with agreeing your aims and objectives and thinking about your strengths and development needs. You then set goals so that you can meet your objectives and make the most of your talent.

A personal development plan (PDP) is an action plan that helps you get organised, identifies learning and development needs to help you do your job better or help in your career, and then tracks progress.


For those new to health and social care, the Care Certificate is the beginning of your learning and will usually form part of your induction. All good employers will want to develop their workers further over time. A development plan to achieve this might be agreed during your induction period or during a review at a later point.

Learning Objectives:

By the end of this module you should be able to:

- Agree a personal development plan.
- Develop knowledge, skills and understanding.

Your Personal Development



Learning Session
Your personal development plan
MENU

Skills, knowledge and competence

Skills, knowledge and competence need to be developed throughout your working life.

A Personal Development Plan (PDP) sets out the areas you need to develop and how to go about achieving this.

Personal Development Plans (PDPs) identify:

Development areas


Objectives

Achieve your objectives

Development areas

Knowledge and skills that must be developed for workers to carry out their role competently.

- Examples of reasons why these could arise include:
 - Changes in legislation
 - Changes to organisational policies or procedures
 - Changes in job role
 - Support needs of individuals they support.



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CARE CERTIFICATE

Module Title: Standard 3: Duty of Care

Module Overview:

You have a duty of care to all those receiving care and support in your workplace. This means promoting wellbeing and making sure that people are kept safe from harm, abuse and injury.

Duty of care is a legal requirement; you cannot choose whether to accept it. It applies as soon as someone has care or treatment. Breaking this duty, for example through negligence, could result in legal action.


Your duty of care is also to other workers, for example, in a hospital, to doctors, nurses and healthcare support workers but also to caterers, cleaners and maintenance workers. If you are a home care worker you will probably work alone in a variety of homes, but there may well be other people in the premises, as well as whoever you are there to support. Your duty of care is to each individual and to the other workers you come into contact with in the community.

Learning Objectives:

By the end of this module you should be able to:

- Understand how duty of care contributes to safe practice.
- Understand the support available for addressing dilemmas that may arise about duty of care.
- Deal with comments and complaints.
- Deal with incidents, errors and near misses.
- Deal with confrontation and difficult situations.

Duty Of Care



Learning Session ▶ Duty of care and safe practice [MENU](#)


What is a duty of care?

You have a duty of care to all those receiving care and support in your workplace.

A Duty of Care is the duty to promote wellbeing and make sure that people are kept safe from harm, abuse and injury.

The duty of care is part of the code of conduct for healthcare support workers and adult social care workers in England and will most likely also be in your job description. It is important that you have the knowledge and skills to act on your duty of care in your role but that you don't work beyond it.

As part of your duty of care you should pass on any concerns you have about wellbeing. Every employer has agreed ways of working to respond to possible harmful situations which will include how to report any concerns. Concerns could be about anything from poor working conditions or equipment to untrained workers, as well as suspected abuse. In any situation, if you do not know what you should do, ask your manager. Providing guidance about how to deal with abuse and violence or substance misuse or how to handle toxic substances or carry out risk assessments are all part of making sure that the duty of care is carried out. Fire drills, agreed ways of handling medication as well as cooking and food storage procedures are some of the routine ways for making sure that everyone knows how to fulfil their duty of care. The agreed ways of working vary from one workplace to another, so you need to check them if you move to a new job in social care or health. Agreed ways of working should be documented, but even if you are told about them only in conversation, you must still work to them.



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CARE CERTIFICATE

Module Title: Standard 4: Equality and Diversity

Module Overview:

Promoting equality and respecting diversity are central to life today. To provide care and support that meets the needs of everyone you have to understand what these terms mean and take account of them in your work.

Equality is about treating people alike according to their needs. You should make sure that everyone is given equality of opportunity. For example, you may need to give information in different formats (for example Braille) or make sure there is access to a building for an individual in a wheelchair.

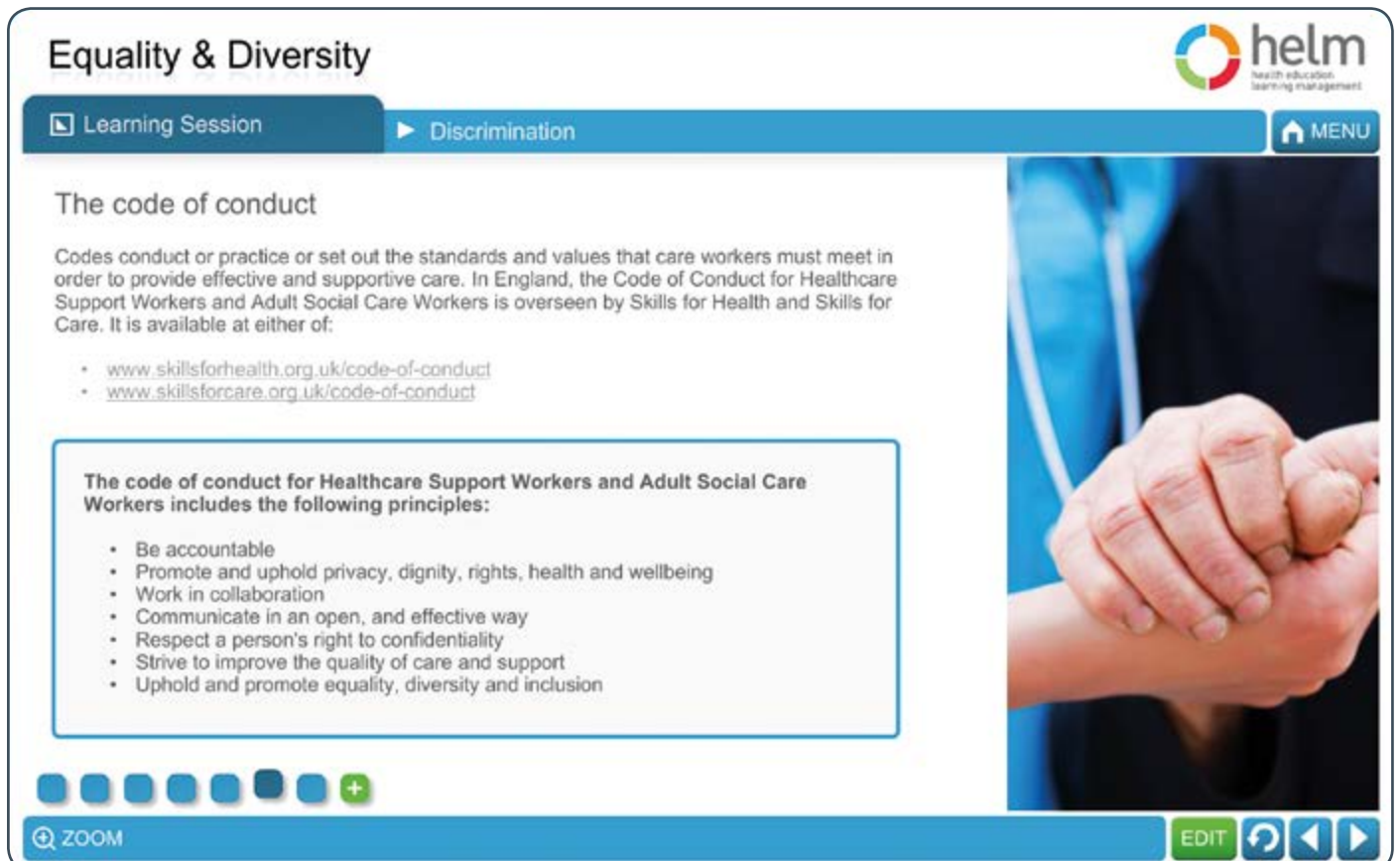
Diversity can be described as 'difference'. All individuals are different; the many different parts of a person's character and identity make them unique.

Examples of the things that make up diversity are: Age, Appearance, Ability, Disability, Job role, Health, Background, Gender, Family, Friends, Sexual orientation, Religion, Belief, Values, Culture, Race, National origins, Marital status.

Learning Objectives:

By the end of this module you should be able to:

- Understand the importance of equality and inclusion.
- Work in an inclusive way.
- Access information, advice and support about equality, diversity and inclusion.



The screenshot shows a digital learning interface. At the top left, the title 'Equality & Diversity' is displayed. To the right is the 'helm' logo. Below the title, there are navigation tabs: 'Learning Session' (selected) and 'Discrimination'. A 'MENU' button is in the top right corner. The main content area is titled 'The code of conduct' and contains text explaining that codes of conduct set standards for care workers. It lists two websites: www.skillsforhealth.org.uk/code-of-conduct and www.skillsforcare.org.uk/code-of-conduct. A highlighted box lists the principles of the code of conduct for Healthcare Support Workers and Adult Social Care Workers: Be accountable, Promote and uphold privacy, dignity, rights, health and wellbeing, Work in collaboration, Communicate in an open, and effective way, Respect a person's right to confidentiality, Strive to improve the quality of care and support, and Uphold and promote equality, diversity and inclusion. On the right side of the interface, there is a photograph of two hands shaking. At the bottom, there is a 'ZOOM' button and a set of navigation controls including 'EDIT', a refresh icon, and left/right arrows.

CARE CERTIFICATE

Module Title: Standard 5: Work in a Person Centred Way

Module Overview:

Whether or not we are aware of it, we all live our everyday lives by a set of values that shape how we think and react. Values are beliefs and ideas about how people should behave which have been formed by our:

- Childhoods
- Families
- Backgrounds
- Cultures
- Religions
- Educations
- Relationships

Whilst we each have our own values there are values which are important for working in health and social care.

Learning Objectives:

By the end of this module you should be able to:

- Understand person centred values.
- Understand working in a person centred way.
- Demonstrate awareness of individual's immediate environment and make changes to address factors that may be causing discomfort or distress.
- Make others aware of any actions they may be undertaking that are causing discomfort or distress to individuals.
- Support individuals to minimise pain or discomfort
- Support the individual to maintain their identity and self-esteem
- Support the individual using person centred values.

Work in a Person Centred Way

Learning Session

▶ Minimising pain or discomfort

HOME MENU

Minimising pain or discomfort

It is your role as a support worker to make other people aware if any of the actions they are undertaking are causing discomfort or distress.

If you see any other worker or employee doing anything like this then you have a duty to report it.

You can report this to your immediate line manager, or speak to the person concerned yourself if you feel comfortable in doing so. If there are learning points to be made, these can be discussed in team meetings to prevent the situation from happening in the future.

It is important that everyone connected to the individual you are supporting is working in a person centred way.



ZOOM

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CARE CERTIFICATE

Module Title: Standard 6: Communication

Module Overview:

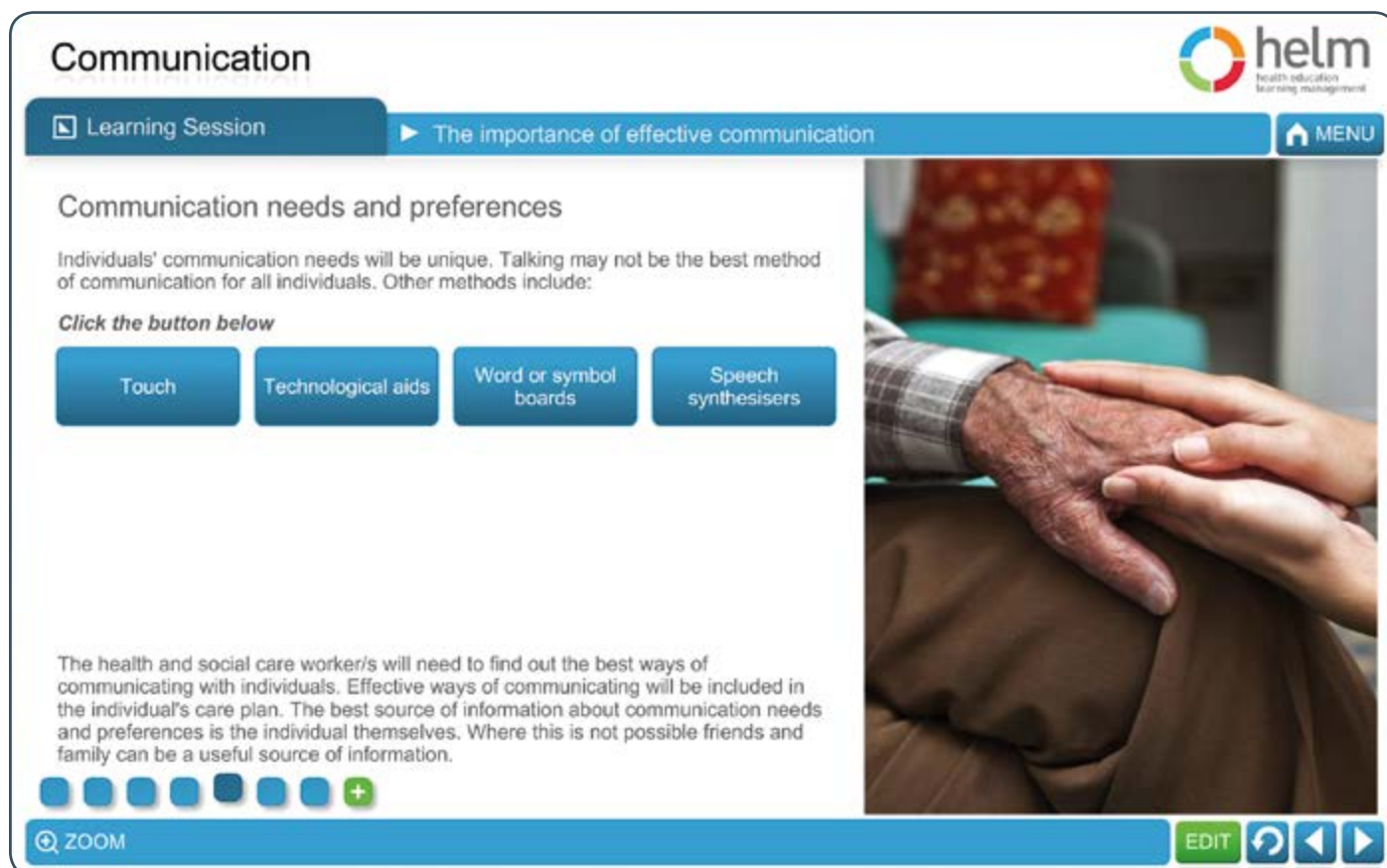
Good communication develops your knowledge and understanding about individuals and the part played by other workers so that the best care and support possible can be provided. It helps build working relationships where each person's views are valued and taken into account.

Communication is an essential part of a caring relationship and helps to encourage trusting relationships with other workers and families as well as the individuals you care for.

Learning Objectives:

By the end of this module you should be able to:

- Understand the importance of effective communication at work.
- Understand how to meet the communication and language needs, wishes and preferences of individuals.
- Understand how to promote effective communication.
- Understand the principles and practices relating to confidentiality.
- Use appropriate verbal and non verbal communication.
- Support the use of appropriate communication aids/ technologies.



The screenshot shows a digital learning session interface. At the top left, the title 'Communication' is displayed. Below it, a navigation bar includes 'Learning Session' and 'The importance of effective communication'. The main content area is titled 'Communication needs and preferences' and contains text explaining that communication needs are unique and listing methods like touch, technological aids, word or symbol boards, and speech synthesisers. A photograph on the right shows an elderly person's hand being held by a caregiver. The interface includes a 'MENU' button, a 'ZOOM' control, and 'EDIT' and navigation icons at the bottom.

Module Overview:

Privacy: giving someone space where and when they need it.

Dignity: focusing on the value of every individual, including: respecting their views, choices and decisions, not making assumptions about how they want to be treated, working with care and compassion, communicating directly with the individual whenever possible.

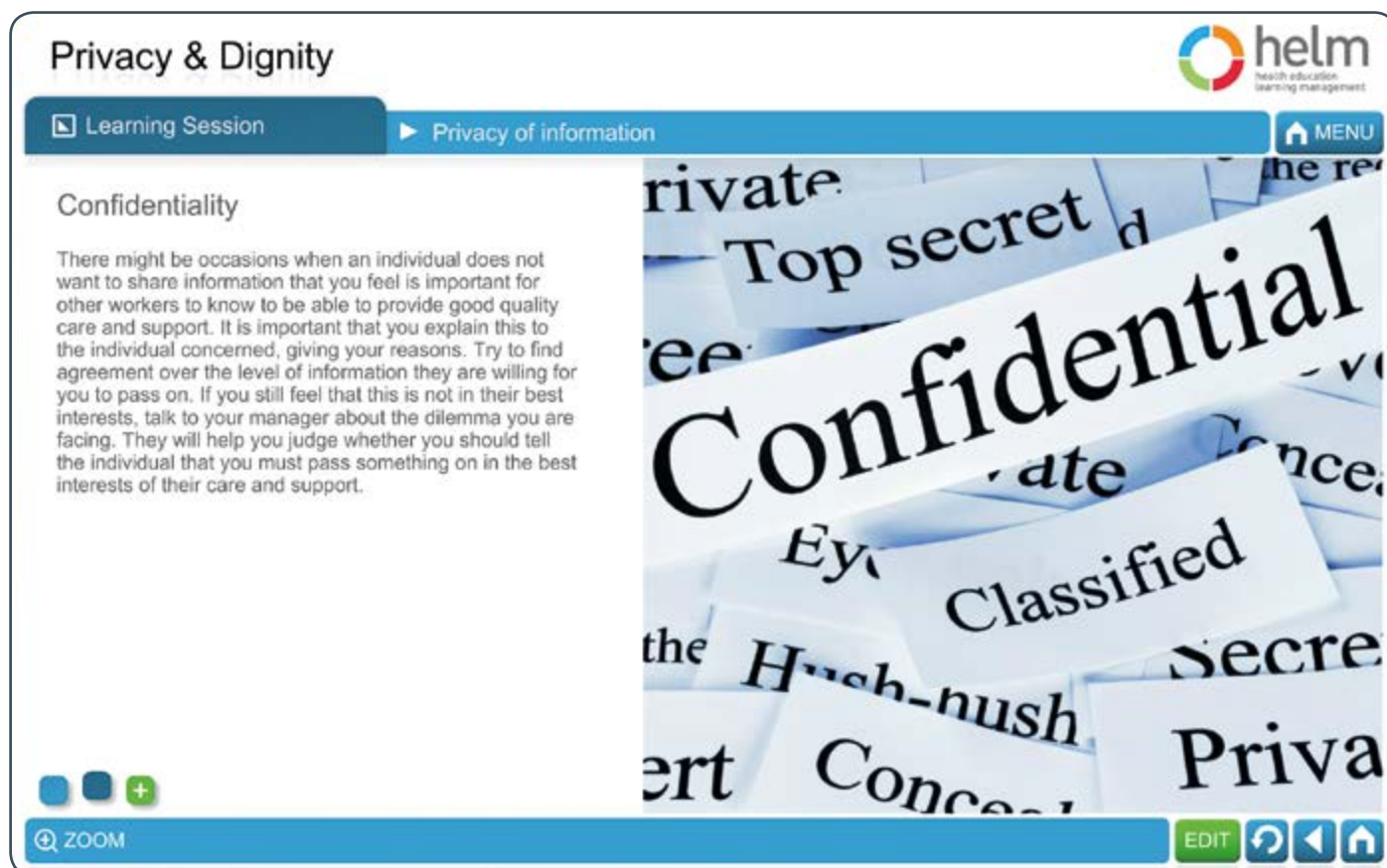
The safeguarding and wellbeing of individuals are very important. As far as possible, you should get to know each individual; their background and ideas, wishes, likes and dislikes.

You should always provide personalised care and support that puts an individual at the centre of their care. You should enable them to be as independent as possible and respect their privacy and dignity. Working in this way reduces the risk of an individual being treated in a way that is degrading or harmful.

Learning Objectives:

By the end of this module you should be able to:

- Describe what is meant by privacy and dignity and any situations where an individual's privacy and dignity could be compromised and also how to maintain privacy and dignity in the work setting.
- Explain that your actions maintain the privacy of the individual.
- Describe ways of helping individuals to make informed choices and report any concerns you have to the relevant person.
- Demonstrate that you can support the active participation of individuals in their care.



The screenshot shows a digital learning session interface. At the top left, the title 'Privacy & Dignity' is displayed. Below it, a navigation bar includes 'Learning Session' and 'Privacy of information'. The main content area is titled 'Confidentiality' and contains a paragraph of text: 'There might be occasions when an individual does not want to share information that you feel is important for other workers to know to be able to provide good quality care and support. It is important that you explain this to the individual concerned, giving your reasons. Try to find agreement over the level of information they are willing for you to pass on. If you still feel that this is not in their best interests, talk to your manager about the dilemma you are facing. They will help you judge whether you should tell the individual that you must pass something on in the best interests of their care and support.' To the right of the text is a large image of overlapping white cards with various security classification labels: 'Top secret', 'Confidential', 'Classified', 'Secret', 'Private', 'Confidential', 'Eye', 'High-nush', 'Secret', 'Private', 'Confidential'. The interface also features a 'MENU' button, a 'ZOOM' control, and an 'EDIT' button.

CARE CERTIFICATE

Module Title: Standard 8: Fluids and Nutrition

Module Overview:

The things we eat and drink play a crucial role in our physical health and general wellbeing. The right sort of diet with the right balance of nutrients encourages our body to function normally, but also helps us feel fit and happy.

As a health or social care worker, it is part of your responsibility to display good practice in all aspects of hydration and diet. This includes:

- Safety and hygiene when preparing or serving food.
- Making sure food is nutritious and supports health.
- Supporting those you care for to eat and drink healthily and according to their needs.
- Addressing any difficulties people have around eating and drinking.
- Learning how to report any concerns you have about the levels or type of care people receive.
- In this module, we'll explore these topics in detail, looking at some practical ways in which you can offer support around diet and health.

Learning Objectives:

By the end of this module you should be able to:

- Understand the principles of hydration, nutrition and food safety.
- Support individuals to have access to fluids in accordance with their care plan.
- Support individuals to have access to food and nutrition in accordance with their care plan.



Fluids & Nutrition

helm
health education
learning management

Learning Session Overview MENU

Introduction

The things we eat and drink play a crucial role in our physical health and general wellbeing. The right sort of diet with the right balance of nutrients encourages our body to function normally, but also helps us feel fit and happy.

As a health or social care worker, it is part of your responsibility to display good practice in all aspects of hydration and diet. This includes:

- safety and hygiene when preparing or serving food
- making sure food is nutritious and supports health
- supporting those you care for to eat and drink healthily and according to their needs
- addressing any difficulties people have around eating and drinking
- learning how to report any concerns you have about the levels or type of care people receive

In this module, we'll explore these topics in detail, looking at some practical ways in which you can offer support around diet and health.

ZOOM EDIT

CARE CERTIFICATE

Module Title: Standard 9: Mental Health, Dementia & Learning Disability

Module Overview:

This standard aims to make you aware of people's experiences with - and the causes of - mental health conditions, dementia and learning disabilities.


While you may not be working in a role that directly supports people with mental ill health, dementia or learning disabilities, it is important for all health or social care workers to be aware of these conditions. This is so that any signs and symptoms you notice are passed on to other workers, and also to help you show compassion and understanding when you experience behaviour you find difficult to understand or respond to. If your organisation provides care and support for individuals with mental health conditions, dementia or learning disabilities, further specialist training should be provided. This will help you to deepen your knowledge, and develop your skills and abilities to meet the needs of your role. It may include opportunities to undertake specialist qualifications. Speak to your manager for more information.

Learning Objectives:

By the end of this module you should:

- Understand the needs and experiences of people with mental health conditions, dementia or learning disabilities:
- Understand the importance of promoting positive health and wellbeing for an individual who may have a mental health condition, dementia or learning disability.
- Understand the adjustments that may be necessary in care delivery relating to an individual who may have a mental health condition, dementia or learning disability.
- Understand the importance of early detection of mental health needs, dementia and learning disabilities.
- Understand legal frameworks, policy and guidelines relating to mental health needs, dementia and learning disabilities.
- Understand the meaning of mental capacity in relation to how care is provided.

Mental Health, Dementia & Learning Disability




Learning Session ▶ Supporting people with these conditions MENU

Introduction

As each individual is unique with a different personality, life history and experience, care and support should build on an individual's particular wants, needs, skills and abilities.

The experience of living with any of these conditions will be affected by the type of support someone receives. For example, if an individual with a learning disability is supported to use and develop their abilities they will become more independent.



ZOOM EDIT

Module Overview:

The Care Act 2014 defines adult safeguarding as protecting an adult's right to live in safety, free from abuse and neglect.

Safeguarding is about people and organisations working together to prevent and stop both the risks and the actual experience of abuse or neglect. Safeguarding balances the right to be safe with the right to make informed choices, while at the same time making sure that the adult's wellbeing is promoted. This includes taking the person's views, wishes, feelings and beliefs into consideration in deciding on any action. Health and social care organisations have particular responsibilities, but every worker has a part to play.

Learning Objectives:

By the end of this module you should be able to:

- Understand the principles of Safeguarding Adults.
- Reduce the likelihood of abuse.
- Respond to suspected or disclosed abuse.
- Protect people from harm and abuse and locally and nationally.

Safeguarding Adults



Learning Session ▶ Types of abuse and neglect MENU

Domestic violence

Domestic violence is any incident of threatening behaviour, violence or abuse (psychological, physical, sexual, financial or emotional) between adults who are or have been intimate partners or family members, regardless of gender or sexuality. It includes psychological, physical, sexual, financial and emotional abuse, and so called 'honour-based' violence.

 **Signs/Indicators**

Signs of domestic violence can be any of those relating to the different types of abuse or neglect that can occur in any incident.



ZOOM EDIT ↶ ↷

Module Overview:

Child protection and safeguarding is everyone's responsibility: it is not only childcare workers that have a duty to promote the welfare of children and protect them from harm.

When you come into contact with children in any way in your day to day work it is part of your job to make sure that their wellbeing is safeguarded.


Please note that in this workbook the term 'child/children' includes any child or young person up to the age of 18.

Learning Objectives:

By the end of this module you should be able to:

- Recognise potential indicators of child maltreatment - physical, emotional, sexual abuse and neglect including radicalisation, child trafficking and FGM.
- Understand the impact a parent/ carer's physical and mental health can have on the well-being of a child or young person, including the impact of domestic violence.
- Understand the importance of children's rights in the safeguarding/ child protection context.
- Know what action to take if you have concerns, including to whom you should report your concerns and from whom to seek advice.
- Demonstrate an understanding of the risks associated with the internet and online social networking.
- Understand the basic knowledge of legislation (Children Acts 1989, 2004 and the Sexual Offences Act 2003).

Safeguarding Children




Learning Session Overview MENU

Introduction


Child protection and safeguarding is everyone's responsibility: it is not only childcare workers that have a duty to promote the welfare of children and protect them from harm.

When you come into contact with children in any way in your day to day work it is part of your job to make sure that their wellbeing is safeguarded.

Please note that in this workbook the term 'child/children' includes any child or young person up to the age of 18.

**Child protection**

Safeguarding is preventative and involves promoting the welfare of children by protecting them from harm and recognising the risks to their safety and security. Child protection is the activity of protecting children who are suffering or may be likely to suffer from significant harm as a result of abuse or neglect.



ZOOM EDIT

CARE CERTIFICATE

Module Title: Standard 12: Basic Life Support

Module Overview:

The topic of basic life support can be a sensitive subject. If you find anything distressing in the course, please take a break and discuss this with your line manager or supervisor.

The Emergency Medical Services (EMS) can, in some cases, take 8-12 minutes to arrive, if not longer in more rural areas or difficult to reach places. During this time it is important that as a bystander, should you be present at the scene of an incident, you know how to put into place the appropriate resuscitation skills - Cardiopulmonary resuscitation (CPR).

Basic life support refers to maintaining the airway and the support of breathing and circulation. This is basic support that you may be called upon at any time to attempt resuscitation on a relative, neighbour, colleague or any other member of the public.

Learning Objectives:

By the end of this module you should be able to:

- Carry out basic life support.
- Complete practical Basic Life Support Training that meets the UK Resuscitation Council guidelines. (If working with adults in health and social care they will undertake training in adult basic life support. If working with paediatric patients in health they will undertake training in paediatric basic life support. If working with newborn patients in health they will undertake training in newborn life support.

Basic Life Support

Learning Session

CPR - Adults

MENU

Cardiopulmonary Resuscitation (CPR)

Cardiopulmonary resuscitation (CPR) should be administered to a casualty who is not breathing normally and who shows no signs of life. CPR is a method of combining chest compressions with 'effective rescue breaths' in order to artificially circulate blood and to put air into the lungs. The depth of compressions is as follows:

- Adult: 5-6 centimetres (similar to the short side of a credit card) using both hands.
- Child (1 year to onset of puberty): - compress at least one third of the chest's depth (5cm), using one hand.
- Infant (0-1 years of age) - compress at least one third of the chest's depth (4cm), using two fingers

The rate of compression should be 100-120 compressions per minute. 30 chest compressions should be administered prior to moving on to breaths (called 'expired air ventilation'). After completing 30 chest compressions, two effective breaths should be administered directly into the casualty's mouth, or in the case of an infant, into their mouth and nose. Each breath should take one second to complete and the casualty's chest should rise as in normal breathing; this is known as 'effective rescue breathing'. Turn your head and watch the chest rise and fall, then administer the second breath.

Please note: CPR must be practiced in a simulated environment as part of the Care Certificate training arranged by your employer. The use of this workbook alone is not sufficient to provide you with the skills to perform CPR, and is not sufficient to achieve the competences required for award of the Care Certificate.



ZOOM

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Module Overview:

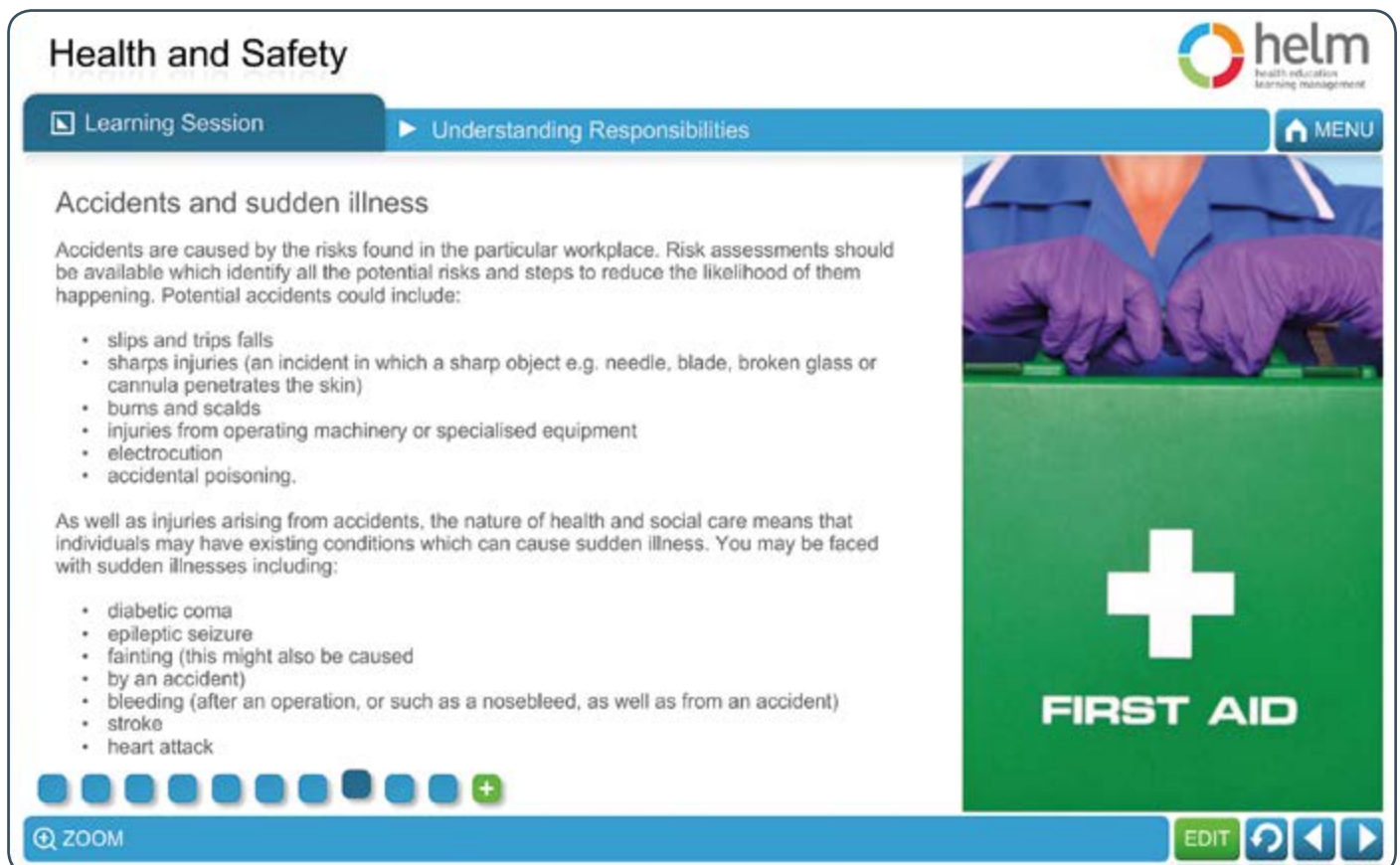
Legislation relating to general health and safety in health and social care.

The main reason for health and safety legislation is to protect people at work and those who are affected by work activities. Legislation (that is, laws) is made so that everyone in society knows which behaviours are acceptable and which are not. Laws cover all aspects of our lives including protecting the health and safety of people at work and those affected by work activities including those who receive care and support.

Learning Objectives:

By the end of this module you should be able to:

- Understand their own responsibilities, and the responsibilities of others, relating to health and safety in the work setting.
- Understand Risk Assessment.
- Move and assist safely.
- Understand procedures for responding to accidents and sudden illness.
- Understand medication and healthcare tasks.
- Handle hazardous substances.
- Promote fire safety.
- Work securely.
- Manage stress.



The screenshot shows a digital learning session interface. At the top left, the title 'Health and Safety' is displayed. Below it, a navigation bar includes 'Learning Session' and 'Understanding Responsibilities'. The main content area is titled 'Accidents and sudden illness' and contains text explaining that accidents are caused by risks in the workplace and that risk assessments should be available. It lists potential accidents such as slips and trips, sharps injuries, burns, and electrocution. Below this, it discusses sudden illnesses like diabetic coma, epileptic seizure, fainting, bleeding, stroke, and heart attack. On the right side of the interface, there is a large image of a first aid kit with a white cross on a green background and the text 'FIRST AID'. At the bottom of the interface, there are navigation controls including a 'ZOOM' button, an 'EDIT' button, and several arrow icons for navigation.

CARE CERTIFICATE

Module Title: Standard 14: Handling Information

Module Overview:

Confidentiality is a very important right of individuals who receive care and support. It is part of the relationship of trust that individuals have with healthcare support workers and adult social care workers.

Within your role, it is important that you are able to record, store and share information within the legal framework and in accordance with your organisation's policies and procedures.

This is referred to as agreed ways of working. Not doing this could put yourself and your clients in a position of danger and harm.

Ways of working exist to benefit and protect you, the clients you support and your organisation. As well as pieces of legislation, policies and procedures are also essential pieces of information that will support you to do this.


It is also important that you know how to deal with requests for information and the codes of practice you must follow.

Learning Objectives:

By the end of this module you should be able to:

- Handle information correctly.
- Know the difference between confidentiality and data protection.

Handling Information



Learning Session ▶ Handling information MENU


Sharing information

Information should always be shared on a need-to-know basis only - for example, with other workers involved in the individual's care. You should not share information with anybody else, even the person's family or friends, without the individual's permission. For example, an individual may not want a friend to know about their health or if they have been unhappy.

It is also essential to protect private information from accidental viewing or hearing. For example, if you met another worker and chatted about your work you should consider whether others would be able to hear or if a personal letter to an individual was left in a public place where other people could read it.

Today there are ways of keeping in touch with people, for example, Facebook and Twitter, where information is shared instantly.

As a health or social care worker you should be careful to use these responsibly and be mindful of the confidentiality rights of all individuals including other workers. Many workers have mobile technology with them at work which means it is possible to share information about their day or individuals without enough thought and so there are increased risks of breaching confidentiality. This is just as much a breach as leaving a record out of the filing system or remaining logged in to a computer when you are not present.



ZOOM EDIT ↶ ↷

CARE CERTIFICATE

Module Title: Standard 15: Infection Prevention and Control

Module Overview:

Infection control is about controlling the spread of communicable disease between people. Infection and infectious diseases in humans are caused when harmful germs, known as pathogens (or pathogenic micro-organisms), enter the body and grow. These micro-organisms are so small they can only be seen by using a microscope.

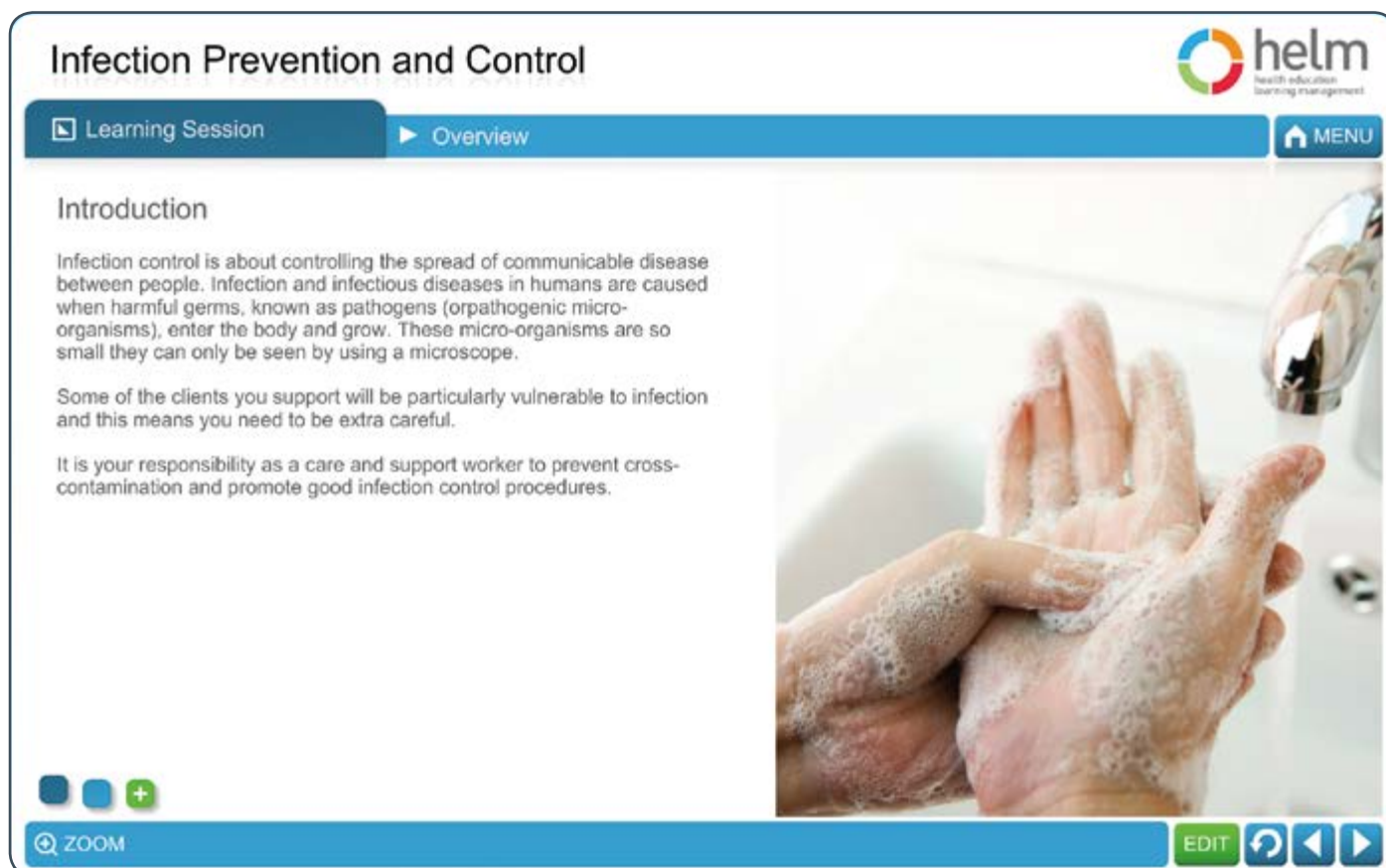
Some of the clients you support will be particularly vulnerable to infection and this means you need to be extra careful.

It is your responsibility as a care and support worker to prevent cross-contamination and promote good infection control procedures.

Learning Objectives:

By the end of this module you should be able to:

- Understand and demonstrate the standard infection prevention precautions relevant to your role including:
- Understand the importance of hand hygiene.
- Understand the importance of personal protective equipment.
- Demonstrate management of occupational exposure.
- Demonstrate management of the Environment.



The screenshot shows a digital learning interface. At the top, the title 'Infection Prevention and Control' is displayed on the left, and the 'helm' logo is on the right. Below the title, there are navigation tabs for 'Learning Session' (selected) and 'Overview'. A 'MENU' button is also visible. The main content area is titled 'Introduction' and contains the following text: 'Infection control is about controlling the spread of communicable disease between people. Infection and infectious diseases in humans are caused when harmful germs, known as pathogens (or pathogenic micro-organisms), enter the body and grow. These micro-organisms are so small they can only be seen by using a microscope.' This is followed by two paragraphs: 'Some of the clients you support will be particularly vulnerable to infection and this means you need to be extra careful.' and 'It is your responsibility as a care and support worker to prevent cross-contamination and promote good infection control procedures.' To the right of the text is a photograph of hands being washed with soap under a running faucet. At the bottom of the interface, there are control buttons for 'ZOOM', 'EDIT', and navigation arrows.



TESTIMONIALS



Switching our statutory and mandatory training to the helm elearning modules, along with the ability to update the content ourselves, has meant that our Trust has been able to focus on quality training delivery. The resulting reduction in time taken to complete and assess elearning has saved our Trust over **£1 million in the first year alone**.

Saving time, not only helps us save money, but also means clinical staff have more time to deliver better quality, patient centred care.



**ED THURLLOW - Core Training Lead -
The Learning and Organisational Development Team
University Hospitals of Leicester NHS Trust**



These are engaging and informative packages which take participants on a structured and fun learning journey whilst also valuing the importance of high quality education and training.

There are many benefits to be realised from using an e-learning approach including creating more time for staff to deliver excellent care to patients.



**SUZANNE HARRIS - Exec Lead: Talent Management, OD and
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Local Delivery Partnership - NHS Leadership Academy**



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